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THE CHANGING PUBLICNESS OF URBAN SPACES

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To my parents

Cities have the ability to provide something for everyone,
just because and, only when they are created by all.

Jane Jacobs

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ABSTRACT

This thesis will focus on the evaluation of different types of public spaces of the contemporary city, exploring the concept of *publicness*. Public spaces, one of the key elements of urban morphology, essential to understand its wider dynamics, have always accompanied major urban changes, with different levels of success. Recently, new forms of space provision and management have emerged, creating social and spatial shifts, redefining social values, needs and routines, and changing the way we look to traditional public spaces. The involvement of the private sector in city production has led to the creation of an increasing number of privately owned, semi-public spaces. These, although seemingly public, at least in appearance, are often created and managed with different goals in mind. Whether in terms of the features it have, to the public it wants to attract, or to what activities can take place there, this raises questions on whether this is socially and morally sustainable.

In order to capture the perceived differences between these spaces, this study presents the development of a publicness evaluation model and its application to eight squares in city centres in the cities of Porto, Portugal and Newcastle upon Tyne, England. By including four different areas of publicness assessment, this methodology goes further than other previously developed studies, by studying the details of the involvement of different stakeholders and their concerns and expectations regarding each space. Also, an attempt was made to try to study the changes in publicness between the main premises of each space's project and the final product, i.e. the finished space, to assess the presence of any major attributes that must not be ignored in any public space project.

In the end, the results of this research show that although each space presents its own particularities, which might affect the publicness perception of their users and of both public and private authorities, main ideas concerning what is publicness remain unchanged regardless of the geographic context. Still, the stigma set upon semi-public space puts them in an unfair position regarding the advantages of their contribution to city development.

Keywords: publicness, public space, privatization, management, contemporary city

RESUMO

Esta tese explora a avaliação de diferentes tipos de espaços públicos na cidade contemporânea, explorando o conceito de *publicness*. Os espaços públicos, um dos principais elementos da morfologia urbana, e essenciais para o entendimento das principais dinâmicas urbanas, acompanharam sempre as principais mudanças nas cidades, apresentando diferentes níveis de sucesso. Recentemente, novas formas de provisionamento e gestão destes espaços levaram a importantes mudanças espaciais e sociais, redefinindo valores da sociedade, necessidades e rotinas dos utilizadores, mudando, deste modo, a forma como olhamos para os espaços públicos tradicionais. O envolvimento do sector privado na produção de cidade levou à criação de um número cada vez maior de espaços, semipúblicos, detidos por entidades privadas. Estes, apesar de aparentemente públicos, pelo menos a nível de aparência, são comummente criados e geridos com diferentes objetivos em mente, quer a nível das suas características, quer em termos do público se pretende atrair e das atividades que aí se podem desenrolar. Isto levanta questões sobre se tais práticas são social e moralmente sustentáveis.

De forma a analisar as diferenças entre estes espaços, este estudo apresenta o desenvolvimento de um modelo de avaliação de *publicness* e a sua aplicação a oito praças no centro das cidades do Porto, em Portugal e Newcastle upon Tyne, em Inglaterra. Através do uso de quatro diferentes áreas de avaliação de *publicness*, esta metodologia vai mais além do que os estudos desenvolvidos anteriormente, estudando os meandros do envolvimento de diferentes agentes e as suas preocupações e expectativas sobre cada espaço. Foi também realizada uma tentativa de estudar as mudanças na *publicness* entre as principais premissas do projeto de cada espaço e o seu produto final, isto é, o espaço finalizado, de forma a identificar e avaliar a existência de características fundamentais e que não devem ser ignoradas em projetos de espaço público.

No final, os resultados evidenciam que apesar de cada espaço apresentar as suas particularidades, que podem afetar a perceção de *publicness* dos seus utilizadores e das autoridades, tanto públicas como privadas, as principais ideias sobre a correta adequação da *publicness* aos espaços mantem-se inalterada, independentemente do conceito geográfico. No entanto, o estigma associado aos espaços semipúblicos coloca-os numa posição injusta relativamente às vantagens da sua contribuição para o desenvolvimento da cidade.

Palavras-chave: ‘publicness’, espaço público, privatização, gestão, cidade contemporânea

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SYMBOLS AND ABBREVIATIONS

BID – Business Improvement District

CCTV – Closed-circuit television

CIAM – International Congress for Modern Architecture

PEM – Publicness Evaluation Model

PPS – Project for Public Spaces

SRU – Society for Urban Rehabilitation (Portuguese acronym)

TWDC – Tyne and Wear Development Corporation

1
INTRODUCTION

1.1. THEME FORMULATION

The human being is, and has always been, a social being. Created to live in community, since the first forms of nomad communities and into the organized settlements that form cities, towns and villages throughout the world, people aspire for the benefits of social development, health, and economic prosperity. By taking advantage of what the city has to offer, urban residents can guide their lives according to a set of goals and expectations and transmit their knowledge to the following generations.

The main objective of this thesis is to explore the concept of publicness as a method of space evaluation. Going into the intricacies of space production, this study will attempt an exploration of the variety of public space types emerging in the contemporary city. Through the estimation of their degree of publicness, the essential elements to its proper design, operation, and overall understanding will be assessed. Also, this study will try to unravel some of the misconceptions that exist today around urban public spaces and how different synergies can contribute to city production.

Within the complex system of current cities, each made of many distinct elements and spaces, each with a particular function, public spaces are a major element in the overall urban structure. Since the earliest forms of modern civilization, we have seen these spaces as the structuring elements of cities, defining its basic structure, providing identity, meaning (Carmona et al., 2003; Lynch, 1984; McInroy, 2000; Taylor, 2004), and increasing its visual attractiveness (Carr et al., 1992). Economic, health and environmental benefits are some among the range of benefits these spaces provide for the city and its inhabitants (Gehl & Gemzoe, 2001; Madanipour, 2003; Swanwick et al., 2003; Wooley, 2005). As space and society are interrelated, these arenas for civil society provide for basic human needs (Carmona et al., 2003; Carr et al., 1992; Madanipour, 1996). While not so long ago acceptable quality of life conditions would be met by the provision of facilities and infrastructures, such as food, water, housing, and medical assistance, in contemporary times the stakes are higher. Today, no discussion of the good life can ignore the particularities of the urban way, ranging from the basic aspects of everyday living to the waves of change, scale, inequality, distribution and sensory experience in urban life (Amin, 2006). Conditions for the establishment of public life are needed, such as the possibility to engage in meaningful interaction with the broader community, civic engagement, and the proximity to family and friends (Lopes & Camanho, 2013). In fact, the ideal city is filled with public parks, plazas, streets and sidewalks where individuals can perform, speak or behave anonymously (Németh, 2009; Watson, 2006).

Nevertheless, one cannot apprehend the intricate nature of public spaces without understanding its volatility. As cities have always coped with change, different ages in city building can be understood not only by different styles of architecture and urban structure, but also through its public spaces. Despite its previously determinant role, both the social and the spatial configuration of the contemporary city

have radically altered the role of public space and inherent public sphere in the set of urban dynamics. Recent cutbacks by municipalities have left some of these spaces damaged and unattended, furthering the image of an unsecure, and in some cases, a dangerous space (Atkinson, 2003). Current globalization trends made visible an increase in competition between cities in a global market, with the main objective of investment attraction, making these types of spaces an "instrument to sell the city" (Madanipour, 2003). The growth of the private sector in the task of city growth and redevelopment have led to privatization phenomena (Davis, 1992; Sorkin, 1992; Zukin, 1991), creating new public arenas for a seemingly new public life. Public spaces are no longer the structuring element of the urban tissue, as they have been losing their vital role regarding urban social activities and interactions and even the ability to be the support of shared activities and routines. The reduction of the public character of much of the city's urban spaces suggests that they have started being considered less as spaces of belonging. The square and the garden have been losing their role as places of social interaction per excellence. Instead, these spaces are understood simply as occasional spots for social gathering and whose dynamics are no longer controlled by its actors. Although some urban spaces still work as expected, retaining the main role a public space should have, others are often empty, unsafe, and dysfunctional.

As Jacobs (1961) notes that a heavy usage of publicly accessible space is the key to create safer areas, maintaining an adequate number of what she called "eyes on the street", there has been an urgent need for the encouragement of the use of public spaces by a wider public, in order to maintain natural levels of surveillance and security. Still, not all of these new spaces may be of free access (Banerjee, 2001), colliding with the basic principle of the right to the city. Making security a top priority is often criticized for increasingly stronger control measures restricting social interaction, individual liberties and unjustly excluding certain people (Davis, 1992; Lofland, 1989; Németh & Schmidt, 2007), while fostering feelings or fear and anxiety (Loukaitou-Sideris & Banerjee, 1998; Oc & Tiesdell, 1999), in what is being seen as the 'end of public culture' (Banerjee, 2001; Mitchell, 1995; Sennett, 1992; Sorkin, 1992). This emerging scenario is actually not a mere privatization process, but a complex reorganization of roles and responsibilities. The potential conflicts associated with this plurality of actors require management structures that can cut across specialized remits and understand the cumulative impacts of apparently unconnected activities and phenomena, in a true multidisciplinary perspective.

The function of urban planning springs from the continuous attempt to render the chaos of individual decisions more orderly by means of zoning and by supplying urban goods and services, such as low-income housing, public transportation, quality streets, and so forth. At the same time, urban planning is simply another element of change added to the process and is consequently "doomed to chase after a chaos which is always one step ahead" (Friedmann, 1987, p. 442). As public spaces started to be perceived as vital components in strategies of urban regeneration and renewal, city marketing, place identity, social inclusion, among others, it has been required for them to accommodate an increasingly and complex range of expectations. With this, public space quality and performance has been attracting considerable attention. Some have promoted these strategies as vehicles of social integration and economic development, while others defended public space creation as a counterpoint to the privatization push that characterized neoliberal economic restructuring, where private sector production of urban environment was encouraged and supported by public authorities (Sorkin, 1992).

As cities have been studied by several scientific areas, ranging from demographics, geography, economics and sociology, public space has also been interpreted through comprehensively distinct scopes and under different lenses.

1.2. STUDY RELEVANCE

Across the world, and with particular relevance to Asia, previously rural countries have caught up with Europe and North America's rates of urbanization, making our Earth's population, for the first time in history, a predominantly urban one. As this trend sees no sign of stopping, cities need careful planning in order to cope with these increasing population numbers. Even in the already established urban centres of the so-called 'developed world', urban policies and strategies have been trying to contain this growth into more sustainable forms. Cities have become so complex, that the growth of most of them has been lacking some of the most basic forms of planning, weakening the outcome of city production. People move to cities in order to get better jobs, to be closer to diverse and better facilities and amenities, and to have their own share of private space at the centre of this dynamic. However, urban inhabitants cannot govern their life simply by 'bouncing' between private spaces. Cities can only remain liveable if they reinforce their uniqueness and sense of place, resulting from their public space and its organic mix of uses (Portas, 2001). Despite the challenges posed to them, and even after some authors have prophesized its disappearance (Lofland, 1989; Mitchell, 1995; Sennett, 1992; Sorkin, 1992), it is argued that public space has seen a return to its glory days (Allen, 2006; Loukaitou-Sideris & Banerjee, 1998; Worpole & Knox, 2007). Even when spaces are well conceived, designed and managed, its effects over the improvement of people's daily quality of life cannot be fully estimated (Wooley, 2005). Public spaces are still needed to achieve lively societies and cities.

"What makes a good square good?" Clay asked this question in an article published back in 1958. Since then, and although much research was developed, the failure of a large number of contemporary projects shows clear signs of inefficacy. Too much importance has been given to the physical design of spaces (Hubbard, 1995) and the replication of strategies which have worked elsewhere, without any concern for the local context and the opinion, needs and expectations of its possible users. As a result, and while over the last decades, many public spaces have been redesigned and others have been created from scratch, only a few have reached success.

As the potential for a place to be called public is vast, there is a need to understand which its essential features are, and what calls for the success of a space. Publicness is used in this study for this goal and, although not a very used term in urban studies, is not by any kind new. In fact, it was first studied in the 1980's by Benn and Gaus (1983) and Mark Francis (1989). However, it received little attention, as it was left apart from the urban debate, until recently (de Magalhães, 2010; Langstraat & Van Melik, 2013; Németh & Schmidt, 2011; Varna & Tiesdell, 2010), showing the recent increasingly growing concern towards this field of research. Nevertheless, there is indeed room to improve, and this study intends to follow that path.

The expected results regarding the publicness level of the different urban locations may provide authorities an important decision support tool, providing information on how to better manage existing spaces, and design new ones. In order to create better cities and increase the urban citizen's overall quality of life, there is a need to take advantage of these new space types that, although seemingly not part of the public realm must be incorporated in it. Many different understandings exist for public spaces, making it a complex and often confusing concept. Public spaces are a product of social construction and will therefore be differently interpreted in different contexts and even within the same context. A space considered public to someone might not be public to another. More now than ever, public space needs to be resilient to these new social, cultural, and economic dynamics. Will these new forms of public life require new spaces, or can public life adapt to the circumstances? The readjustment of the concept of public space and its publicness represents one way of understanding this new scenario.

1.3. MAIN OBJECTIVES AND RESEARCH QUESTIONS

This research focuses on the changes contemporary cities have experienced, which affected the use, perception, and overall operation of its public spaces, ultimately disturbing public life. In order to determine whether publicness can be used as an effective measure of space performance, the development of a new publicness evaluation model will be the major objective of this work. This will allow the understanding of how the different particularities of a space can affect how they are used, and how the city and its citizens can take advantage of them.

Several secondary objectives will surround this main goal and are a consequence of the necessity for properly informing the research process. Consequently, it is not possible to understand publicness and define a new evaluation methodology for public spaces without understanding its true essence. Determining the evolution of public space importance, role, actors, and expectations requires a comprehensive research through the existing literature. Getting to the main issues of the debate around public space and what features and issues are deemed most relevant for practitioners, designers, authorities and citizens at large, is quintessential to this process.

As the key elements that characterize publicness will be redefined, in this new approach towards urban spaces, different spaces, in terms of its physical features, ownership schemes and operational particularities, will be associated with a particular publicness level. A strong division between public and private, that for long has shaped our cities and societies, is under strong questioning. With this new set of urban dynamics, must ownership strongly define the distinction between public and semi-public spaces? This also launches important questions on the suitability of this methodology to distinct geographic, economic, and social contexts. If public spaces are differently interpreted in different contexts, most likely a similar process will take place regarding their publicness. Therefore, the creation of a publicness assessment model not only capable of incorporating the recent changes affecting our cities, but also the perspective of different stakeholders and these subtle changes in interpretation can contribute positively to this goal.

Design and management recommendations on how to improve the publicness of urban spaces will, most likely, appear as a natural consequence of this research. In the end, if deemed necessary, the concept of public space will also be redefined in order to better adapt it to this new light. With such a developed study around public spaces, why as publicness never been integrated, at this extent, sooner? The question poses on how and if it can gain a place in the set of broader urban studies.

The main research questions of this work are the ones that follow:

- Is publicness a valid measure of space performance?
- Is the public/private dichotomy still valid?
- Are public spaces equally interpreted in distinct contexts?

1.4. THESIS STRUCTURE

This thesis is composed of seven main chapters. This first introductory chapter was concerned with introducing the main subject of this study, the main objectives of this research and the three main research questions. The theoretical foundations to achieve these same goals will form the following chapters.

Chapter 2 will focus on the definition of the concept of public space. Here, an extensive literature review will target the evolution of the role of public space throughout times, how the different agents in urban development have a stake on it, and how different terms have been created in order to guide the research of different areas of expertise. This is essential to properly discuss the concept of public space and successfully integrate it within the contemporary context. This process will, in the end, form the path to the definition of the concept of publicness, which will guide this work.

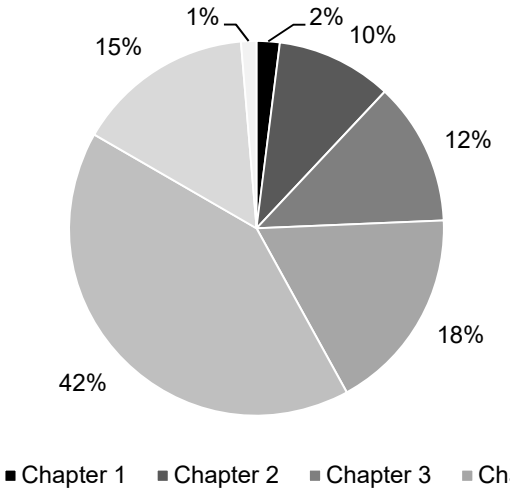
Chapter 3 will inform the reader about the debate developed around the concept of public space. The recent changes in society, economy and the overall urban structure and development process have, as mentioned before, had a strong impact on public spaces, not only in the way they are provided, but also on how they are perceived and used. The potential for public spaces in our societies will launch the debate on what features define a successful space, but also in aspects such as physical and social rundown, safety, control, and privatization.

Chapter 4, entitled 'Development of a publicness assessment model', will focus on the definition of the key elements of publicness. Previous publicness studies will be analysed, with the purpose of identifying areas of improvement as well as its suitability to the contemporary context and to this work's proposed objectives. Only after this can the characterization of the used indicators, levels of assessment and how to collect the information for each one, take place.

Chapter 5 consists in the application of the previously defined 'Publicness Evaluation Model', or PEM, to each of the assessed case studies. Starting with the process leading to the selection of the case studies, a brief presentation of each one will take place, before the analysis of its publicness for both project and operation stages. Here, the different particularities of each space will, hopefully, start to provide important insights for the achievement of answers to the intended objectives.

Chapter 6 will present the discussion of the results generated from the application of the PEM. The interconnection of the results for the different indicators will be made in an attempt to determine the main features that characterize successful places. A thorough analysis of each space usage patterns will also take place, due to the extensive use collection process that characterizes the Publicness Evaluation Model, effectively answering the research questions defined in this introductory chapter.

Finally, chapter 7, as the closing chapter of this thesis, will present the main conclusions obtained throughout the development of this research work. The potential for research will also be explored in this chapter, not only in measures to improve the assessment model but how to optimize and further validate the research in hand.



Chapter number	Page length
Chapter 1	6
Chapter 2	30
Chapter 3	37
Chapter 4	53
Chapter 5	124
Chapter 6	46
Chapter 7	4

Figure 1.1 – Chapter page percentage in the overall thesis structure

As seen in the above figure, chapters 1 to 3 compose roughly 25% of this thesis's total size, therefore making a solid, and yet not overly long for a PhD research (just under eighty pages) theoretical introduction to the creation of the Publicness Evaluation Model. The background for the development of this model is presented in chapter four throughout a little over fifty pages, in order to inform the reader of all the distinct particularities of this evaluation model.

A special regard has to be made for the case of chapter five, accounting for more than 40% of this document's total size. Although this appears disconnected, size-wise, with the remaining chapters, this fact is justified by the lengthy and extensive indicator collection process for each of the case studies in analysis, resulting in a large amount of collected information. Numerous graphical elements and photographs, necessary to illustrate some of the space's publicness features, also contribute to the high number of pages of the final product. Although the decision to insert part of this information in a separate annex was put under discussion, this would create a break in the natural continuity of the presentation of information, resulting in a less appealing document and forcing the reader to often cycle between the main text and the annex section, in order to fully grasp the particularities of each site.

The discussion of the results, i.e. chapter six, by including, among the major results of the PEM, the answers to the research questions, is developed throughout forty-six pages. The concluding chapter presents a similar size to the introductory one, therefore balancing both ends of this thesis. When looking at the overall picture, and although the creation of a more evenly balanced document, in terms of chapter size, would be preferred, the large amount of collected information and the lengthy process required to redefine the concept of publicness ended up emphasizing this section of the research process.

2
PUBLIC SPACE

2.1. INTRODUCTION

It is not possible to understand the on-going changes in public space without knowing its true essence. As the name suggests, this chapter will focus on the concept of public space in the urban setting, serving as the starting point to the overall study of this thesis.

To fulfil this goal, the following pages will address the presentation of the different interpretations of the concept, with a special focus on the ones created in the analysis of its distinct dimensions and connections. Afterwards, they will be aided by the aggregation of its historical evolution, since the classical era, epitomized by the Greek agora, and through the dawn of modern civilization into the multiplicity of spaces that form the contemporary metropolis. With this, it will be possible to understand its different roles and known benefits, not only to the city but also to its inhabitants.

The presentation of the different agents involved in public space production and operation will finish the structure of this first chapter related to public space, allowing for a brief understanding of the process upon which it is created.

2.2. THE ETYMOLOGY OF PUBLIC SPACE

2.2.1. WHAT IS A PUBLIC SPACE?

The definition of the concept of 'public space' must begin with the quintessential definition of the word 'public', derived from the Latin 'populous', with a wide range of meanings. The Oxford English Dictionary's definitions of the term, as an adjective, include: "belonging to, affecting, or concerning the community or nation; authorized by or representing the community; open or available to, used or shared by, all members of a community; not restricted to private use; open to general observation, sight, or knowledge; accountable to the general public" (Madanipour, 2003, p. 108). As a noun, the term comprises definitions such as: "in public, in a place or state open to public view or access; organized society, the politic body; a nation, a State; the interest or welfare of the community; the members of the community; a section of the community having a particular interest in or special connection with the person or thing specified" (ibid., p.109). With such a wide range of meanings, the word is indeed used in a variety of combinations and phrases, such as 'general public', 'going public', 'in the public domain', 'public act', 'public company', 'public figure', 'public good', 'public holiday', 'public interest', 'public life', 'public opinion', 'public ownership', 'public sector', among others.

Despite all these definitions, the term 'public' can simply be interpreted as the opposite of private. Public and private are, undeniably, interconnected terms, which only make sense when related to each other.

This distinction has repercussions in several aspects of society, politics, and economy, ultimately affecting the city and its inhabitants. As an example, in economic terms, the private or public ownership of land and property had a great influence in the overall shape of the city and its development patterns. In political terms, the relationship between private and public realms was a key notion in the development of modern democracies and continues to be a key issue in the actual debate. Finally, in cultural and social terms, the distinction between public and private determines the routines of daily life and is crucial in the relations between self and other, i.e., individual and society (Arendt, 1958; Madanipour, 2003). Overall, the history of the words 'public' and 'private' is essential to understand the shift in terms of Western culture.

Going back to the early forms of Modern Civilization, in the fully developed Greek city-state, the sphere of the polis, common to the free citizens, was strictly separated from the sphere of the household, known as 'oikos'. The Agora, the main setting for public life, was the embodiment of a collective 'public' reality, devoid of any physical boundaries, setting the foundations for the evolution of the relationship between public and private. While the first recorded uses of the word 'public' in English identify it with the common good in society, throughout the modern period, legal questions of equality, justice and society values guided a number of different perspectives (Madanipour, 2003).

By the end of the 17th Century, the opposition between 'public' and 'private' approached the currently common definition: "Public meant open to the scrutiny of anyone, whereas private meant a sheltered region of life defined by one's family and friends" (Sennett, 1992, p. 16). A few decades later, in the early 18th Century, the word 'public' had its current definition sturdily established in society. Particularly in Paris and London, the largest and most cosmopolitan cities in Europe, the bourgeoisie became less concerned to cover up their social origins and the term "meant not only a region of social life located apart from the realm of family and close friends, but also a public realm of acquaintances and strangers that included a relatively wide diversity of people" (ibid, p.17). The creation of the modern society, understood as a realm of exchange among strangers, replaced a social order in which traditions were its quintessential foundation and individuals "related to one another through involuntary ties of kinship and clan" (Madanipour, 2003, p. 232).

As a result, it is usual to refer to 'public' events and occasions when they are open to all, in contrast to closed or exclusive affairs where a more private tone is in place. By seeing the public as the "in-between space which facilitates co-presence and regulates interpersonal relations" (Madanipour, 2003, p. 169), everything that appears in public can be seen and heard by everybody (Arendt, 1958). In the same line of thought, public buildings, for instance, do not have to be open to public, as the simple fact of housing state institutions makes them public. Its publicness is therefore embodied by a 'public authority' who promotes the "public or common welfare of its rightful members" (Habermas, 1962, p. 2).

However, the idea of 'public' is of greater relevance when it gains a physical dimension, giving birth to the concept of 'public space' (Madanipour, 1996). Similarly to the evolution of the concept of 'public' itself, for Habermas (1962) the root of public space as a distinct concept is an historical product, developed with the differentiation between the representative state, the civil society and the market, and the consolidation of modern notions of private property. Low and Smith (2006) understand public space as a broader concept, by the inclusion of the "range of social locations offered by the street, the park, the media, the Internet, the shopping mall, the United Nations, national governments, and local neighbourhoods. Public space envelops the palpable tension between place, experience at all scales in daily life, and the seeming spacelessness of the Internet, popular opinion, and global institutions and economy" (Low & Smith, 2006, p. 3). This last definition shows that the concept of public space is fairly spatially comprehensive and not quite as homogeneous as one would expect. With this in mind, it can either be expanded to define all those physical spaces that are not strictly private, including not only

publicly owned spaces but also all those spaces in which social and civic functions with a public character are performed, regardless of ownership (Ellin, 1996), including the so-called semi-public or 'third places', such as cafés, book stores, bars, etc. (Banerjee, 2001; Oldenburg, 1999). On the other hand, by moving into a managerial perspective, it can be narrowed down as in the responsibility for local government public-space services, referring specifically to state-owned parks, civic spaces and most ordinary streets and squares (de Magalhães, 2010).

The relationship between space and personal freedom is another division point. Private space is demarcated and protected by state-regulated rules of private property use, public space, and while far from free of regulation, particularly in the contemporary city, is generally conceived as open to greater or lesser public participation (Madanipour, 1996). Public space is traditionally differentiated from private space in terms of access rules, sources and nature of control over entry to a space, individual and collective behaviour, and rules of use (Low & Smith, 2006). In fact, the organization and management of space, setting some of the main patterns of spatial behaviour and social life in general, condition where individuals can or cannot go in a city. Therefore, looking at the public-private distinction is a way of understanding the urban social and spatial organization (Madanipour, 1999). According to Miller (2007, p. ix):

> "We tend to think of public space as having certain essential and obvious characteristics. We believe it is publicly owned, the opposite of private space. We believe it is open and accessible to everyone, where no one can be turned away. We imagine it as the setting for important civic events, where large groups of people come to celebrate, protest, and mourn. We see it as somehow part of democratic life, a place for speaking out and being heard."

Given the variability of the concept, it makes sense to try to define public space according to its main attributes. Kohn (2004) defends the treatment of public space as a 'cluster concept', meaning a term that has multiple and sometimes contradictory definitions. As a result, she defines public spaces according to its "public (ownership), accessibility and intersubjectivity" (p.11), associating it with places owned by the government, accessible to everyone without restrictions and with the potential to foster communication and interaction. This last attribute is essential, as according to Kohn, the study of the qualities of public space cannot rely solely on the first two. This means the necessity to study the ways in which a given space either fosters or inhibits interaction between its users. In a similar interpretation, Low and Smith (2006, p. 3) emphasize the role of rules of access, the nature of control over entry, the nature of sanctioned collective and individual behaviour through the enforcement of rules of use as the key differentiator between public and private space. For Benn and Gaus (1983), the key attributes here are access, agency and interest, a division that many authors later adopted for their studies (Akkar, 2005; de Magalhães, 2010; Madanipour, 1999; Németh & Schmidt, 2011). In this visualization, the first quality indicates access to the place, physical and social, as well as the activities in it, the second being the locus of control and decision-making present, and the latter the targeted beneficiaries of actions or decisions impacting on a place.

Mitchell and Staeheli (2006) see this essence simply residing in rights of access, of being there, for all citizens. In this interpretation, public space would include "all those parts of the built and natural environment where the public have free access. It encompasses: all the streets, squares and other rights of way, whether predominantly in residential, commercial or community/civic uses; the open spaces and parks; and the 'public/private' spaces where public access is unrestricted (at least during daylight hours)" (OPDM, 2004, p. 10).

For some, the creation of spaces for encounters with difference is essential to a democratic policy, as Watson (2006) emphasizes public space as sites for protest and for the expression of minority interests.

Carr et al. (1992) and Worpole and Knox (2007) share this view by defending the value of public space as the common ground for community life and the opportunity those spaces create for shared use and activity, meeting and exchange, regardless of ownership. To them, almost any place, regardless of its ownership and appearance, offers potential as public space. Indeed, Amin (2008) argues that non-spatial parts of the public sphere such as the Internet, have been capable of replicating these same attributes of traditional physical public space. According to Neal (2010a, pp. 4-5), public space can summarily be viewed as a "facilitator of civil order", as a "site for power and resistance", and as a "stage for art, theatre, and performance". Webster (2007) uses the consumption characteristics of public space in order to proceed to its classification, introducing the notion of 'public good'. As most civic goods and public spaces are virtually enjoyable by all, and therefore consumable, they can be considered public. On the other hand, the remaining urban space can be understood as a private good if its use is exclusive to a single individual or a restricted number of them, or whose consumption renders it unavailable to others. Nevertheless, it is important to note that few spaces are purely public or purely private.

Madanipour (2003) previously engaged on an interesting approach in his study of the differentiation between public and private space. With the mind being the purest form of private space, even if constantly facing external forces, outside of our control, the human body acts as the main barrier between the individual private space and the outside public space. All the external elements such as clothing, body ornaments, behavioural patterns, gestures, etc., belong ambiguously to the public and private. This boundary between the public and the private in an individual is referred to as a mask, and is composed of our daily routines. The masks we wear to face others are usually made of normal routines. Although the various parts of the day are distributed over public and private scopes, and the transition from public to private is a complex phenomenon, with several levels of 'publicness' and 'privateness' in the process, public space is the main vehicle of psychological development, personal identity and empowerment over the social networks. It is therefore defined, in opposition to other types of space, as places outside the boundaries of individual or small group control, mediating the various private spaces and used for a variety of often overlapping functional and symbolic purposes.

Intersubjectivity	Accessibility	Freedom	Democracy	Public Ownership
Benn & Gaus, 1983	Benn & Gaus, 1983	Benn & Gaus, 1983	Watson, 2006	Kohn, 2004
Carr et al., 1992	Kohn, 2004	Low & Smith, 2006	Neal 2010a	
Madanipour, 2003	OPDM, 2004	Webster, 2007		
Kohn, 2004	Low & Smith, 2006	Neal, 2010a		
Worpole & Knox, 2007	Mitchell & Staeheli, 2006			
Amin, 2008				
Neal, 2010a				

Figure 2.1 – Public space main attributes

The capacity to host human and social interaction freely, while being accessible to any, are the most common ideas guiding the definition of a public space (Figure 2.1), meaning that the potential for variation between what is public and what is private is considerable, and as a result, the common-sense definition of public space is usually far from reality. According to Miller, this can be partially explained by our concern with the permanent physical qualities of public spaces as "we tend to spend more time thinking about the places themselves" (Miller, 2007, p. xi). By limiting the focus on the physical and the concrete, we tend to ignore nonphysical qualities, such as legal, economic, political, and aesthetic,

which affect a public space. Public spaces are not mere “static physical entities” but also “constellations of ideas, actions, and environments” (ibid.).

Currently, the separation between public and private is kept at an ambivalent state, allowing the establishment of public-private partnerships. To increase efficiency and flexibility, the working methods of public organizations are altered to approach the ones in the private sector. Social encounters are also encouraged between this fine line but, at the same time, the two realms are kept apart, in order to avoid conflicts that would cause a weakening of the public interest by the private ones but also to the intrusion of the public realm into the private sphere. The more vague and articulate the boundary, “the more civilized a place appears to be” (Madanipour, 2003, p. 66). In the end, we opt out for keeping the public and private as distinct sets, “for very few of us would wish to live in an undistinguishable common space” (ibid.).

For this matter, Goodsell (2003, p. 370) proposes a unified definition of public space, combining its more physical dimensions, such as design, with broader social and political features, often associated with these locations. The result is what follows:

- Generic definition of public space: A space-time continuum for connected and interactive political discourse.
- Place-bound public space: The above consisting of face-to-face interaction in a single physical location.
- Electronic public space: The above achieved at dispersed geographic locations through information technology.
- Extended public space: The above when broadcast by television, radio, Internet, or other means.
- Pure definition of democratic public space: The above when open to all, unrestricted as to conduct, and unconditional as to participation.
- Practical definition of democratic public space: The above when public access is encouraged, the status of state authority is muted, barriers between governors and governed are minimized, staging is arranged by the people as well as officials, and conditions conducive to deliberation are fostered.

This growing scale of discrimination demonstrates, once again, the complex and abstract nature of public space, and how the different scopes and areas of analysis can interpret it differently. As the traditional concept of public space that views it as the sole ground for all public purposes is no longer valid, different related concepts that analyse it under different lenses can provide important insights, as the following section will demonstrate.

2.2.2. PUBLIC SPACE AND ASSOCIATED CONCEPTS

The essence of the concept of 'public', as seen previously, has the potential to overflow its somewhat limited physical dimension. Each individual's interpretation of public, and therefore of public space, will create a distinct representation of the world.

According to Francis Tibbalds (2001, p. 1) "all the parts of the urban fabric, to which the public have physical and visual access", compose what can be called the 'public realm", extending from the streets, parks and squares of a town or city into the buildings that line and enclose them. As they are the place where the greatest amount of human interaction takes place, the public realm is coined as "the most important part of our towns and cities" (ibid.). In broad terms, the public realm includes all the spaces accessible to and used by the public, including (Carmona et al., 2003):

- External public space: pieces of land that lie between private landholdings. In urban areas, these are public squares, streets, highways, parks, parking lots, etc. and in rural areas, they are stretches of coastline, forests, lakes, rivers, etc. Accessible to all, these spaces constitute public space in its purest form.
- Internal 'public' space: public institutions such as libraries, museums, town halls, etc., plus public transport facilities such as train or bus stations, airports, etc.
- External and internal "quasi-public" space: although legally private, spaces such as university campuses, sports grounds, restaurants, cinemas, shopping malls, also form part of the public realm. This category also includes what are commonly described as 'privatised' public spaces. As the owners and operators of all these spaces retain rights to regulate access and behaviour there, they are only nominally public. Sorkin (1992) refers to this, pejoratively, as 'pseudo-public' spaces.

For Madanipour (1996), this term often means the spaces in the city that are not private, representing, summarily, the spaces between buildings. Lofland (1989), on a more social note, refers to it as the spaces in the city which tend to be inhabited by persons who are strangers or who 'know' one another in terms of occupational or non-personal identity. However, it is usual to see the term split from the analysis of sole physical spaces, as the public realm can be associated to the full range of places, people and activities that make the public dimension of human social life, providing the foundation for social interaction (Madanipour, 2003; Montgomery, 1995). Here, the term physical space is associated with 'physical public realm' and the activities that occur within it as the 'socio-cultural public realm' (Carmona et al., 2003; Oc & Tiesdell, 1998). Nevertheless, this 'space system', "varying from formal to informal, and from grand civic spaces to outdoor rooms" (Montgomery, 1998, p. 101), must be interpreted differently from the actual processes responsible to shape and characterize public social life itself (Montgomery, 1997).

Lang (2005), for instance, defended that a rewarding understanding of the public realm was to consider it as a set of behaviour settings, a term coined by ecological psychologists in the 1960's, divided in two sections, the first dealing with the public components of the physical environment, in which behaviour occurs and the second specifying how communal decisions are made by governments and in the marketplace. As a political stage, the public realm involves and symbolizes important activities to citizenship and to the maintenance of a civil society. This 'political' public realm has interested many writers, such as Hannah Arendt (1958), who defended the idea of the city as a 'polis', a self-governing political community where citizens deliberate, debate and solve issues. She saw the public realm as satisfying three criteria: memorializing the society and thereby conveying a sense of its history; as an arena for diverse groups of people to engage in debate and oppositional struggles; and as being

accessible to, and thus usable by, all (Ellin, 1996). In the end, the public realm is what differentiates the city from other settlement types.

On non-urban agglomerations, the distinction between private and public space tends to vanish (Lofland, 1989), due to the usually stronger network of personal acquaintances. However, in the city, when leaving private space, one moves into a world of many unknowns and where only categorically one knows others. In this process, it is usual to encounter a crowd of whom one does not share the same values, history, or perspective. Ideally, the public realm functions as a "forum for political action and representation, as a neutral ground for social interaction, and communication, and as a stage for social learning, personal development, and information exchange" (Loukaitou-Sideris & Banerjee, 1998, p. 175). In fact, in the city, the exit from private space is always made into the 'public realm'. Nevertheless, areas belonging to a highly cohesive neighbourhood, for instance, due to its social similarities to small settlements, cannot be considered as belonging to the public realm, at least for its residents, in similarity with non-urban settings.

Among development actors, although the public realm is often used as a synonym for public space, for social scientists it is interpreted as a synonym for public sphere (Varna & Tiesdell, 2010). This means that an understanding of public space is key for understanding the public sphere (Low & Smith, 2006; Madanipour, 2003). Jürgen Habermas first introduced this concept in his 1962 book 'The Structural Transformation of the Public Sphere', "rooted in the development of the civil society that originated in late medieval Europe" (Madanipour, 2003, p. 173). In social and political thought, three main currents were identified which offer concepts of public sphere (Benhabib, 1992), mainly the ones that correspond to the works of Jürgen Habermas, Hannah Arendt and the liberal tradition.

The first one is of major relevance as the concept of 'public sphere', and represents nothing more than an universal abstract realm where democracy occurs, contrasting with the physical and material public space, that provides an actual physical space for interaction, but also with the private sphere comprising civil society, that is to say, "the realm of commodity exchange and of social labour" (Habermas, 1962, p. 31). Although adapted to the modern society, at the time of Ancient Greece the public sphere was already defined and was "constituted in discussion, which could also assume the forms of consultation and of sitting in the court of law, as well as in common action" (Habermas, 1962, p. 3). The line between state and society, in his perspective, divides the public sphere from the public realm. By being the most accepted interpretation of term, Habermas' public sphere was coined as being the place "where individual masks are displayed, compared and reshaped" (Madanipour, 2003, p. 126), "a theatre in modern societies in which political participation is enacted through the medium of talk" (Fraser, 1992) and as "arena of discursive interaction to the deliberation of the citizen's common affairs" (Carmona et al., 2003; Fraser, 1992).

By being more than a mere physical space it represents "a common space in which the members of society are deemed to meet through a variety of media: print, electronic, and also face-to-face encounters, to discuss matters of common interest, and thus to be able to form a common mind about these" (Taylor, 1995, pp.185-6, quoted in Madanipour, 2003, p. 180). The public sphere, therefore, "emphasizes the ideas, media, institutions, and practices that all contribute to the generation of something that we can call the public, publics or public opinion" (Low & Smith, 2006, p. 5). The public is, nevertheless, not only devoted to the formation of a public discursive opinion, but also to the transformation of bourgeois social relations, in a normative search for political and moral effectiveness, thereby allowing the formation of social identities (Fraser, 1992; Low & Smith, 2006). This contrasts with the private sphere, as due to its higher number of participants who engage in critical and rational discourses (Calhoun, 1992), represents the "part of life that is under the control of the individual in a

personal capacity, outside public observation and knowledge and outside official or state control" (Madanipour, 2003, p. 40).

Whereas Habermas tended to analyse, and indeed idealize, the modern bourgeois public sphere to develop his normative model, Arendt (1958) forms a critique of the general society and the loss of the public realm, based on the one in the Greek polis. In her understanding, the modern period with the rise of the nation state has been parallel with the rise of a social realm. This led to an interflow of the public and private spheres and to substantial transformations in their meaning and significance. The mass society, with its drive for equality, conquered the public realm, leading to an emergence of a social realm that is neither public nor private. In fact, when the public sphere was opened to larger numbers of people, the inevitable result was a change in the nature and quality of public sphere. (...) "The ideal of face-to-face interaction by the elite will have little chance if applied to the large, complex society of today" (Madanipour, 2003, p. 179). Nevertheless, Arendt and Habermas both agree on the loss of the distinction between the public and private spheres which ultimately led to the decline of the public one (Benhabib, 1992; Madanipour, 1996, 2003).

To close the trio of distinct interpretations, Benn and Gaus (1983) believe that the liberals have a general commitment to maintain a balance between the public and private sphere. This normative model of the public sphere is founded on the legitimation of power through public dialogue, based on a number of constraints, the most significant being the neutrality of the participants, and acts on the fact that the public sphere can be equally open and accessible to all members, whose membership is defined solely by citizenship (Staeheli & Thompson, 1997). From the work of Nancy Fraser (1992), particularly the work challenging the definitions of public sphere laid out by Jürgen Habermas, Miller (2007, p. xvii) bases her understanding of the public sphere as a "dynamic relationship among publics formed around issues of concern and bodies accountable for addressing these issues". Fraser argues that there is not a single public and, therefore, multiple publics and multiple public spheres, but also that Habermas' analysis of the public sphere needs to go through some critical interrogation if it wants to be capable of theorizing the limits of actually existing democracy. Under the conditions of the late twentieth century, characterized by the rise of a privatized market economy, this model is no longer feasible and some new forms of public sphere are required in order to save that arena's critical function and to institutionalize democracy. In a society defined by private property, the formation of a public sphere that encompasses and considers the needs of all the different types of public is exceedingly difficult (Mitchell, 2003). This separation between society and state was supposed to allow the engagement into a new form of public discussion, oriented towards public interest. However, society was characterized by strong class struggles, leading to the formation of competing interest groups. With the appearance of the 'welfare state mass democracy', society and state became reciprocally tangled, leading to the manufacture and manipulation of public opinion.

So, the "full utopian potential of the bourgeois conception of the public sphere was never realized in practice and the claim to open access in particular was not made good" (Fraser, 1992, p. 113). In stratified societies, "Geoff Eley suggests we think of the public sphere as the structured setting where cultural and ideological contest or negotiation among a variety of publics takes place" (ibid., p.125) doing therefore justice to the multiplicity of public arenas in stratified societies by explicitly acknowledging the existence and activity of a variety of publics. In this liberal interpretation of the public sphere, Habermas failed then not only to idealize the ideal liberal public sphere, but also to analyse other, non-bourgeois, competing public spheres. Fraser ends up by acknowledging the need for a post-bourgeois conception that would allow envisioning a greater role for public spheres than mere autonomous opinion formation removed from authoritative decision-making. More than mere physical spaces, the appearance of new places to meet, gather, and interact, like electronic communities,

television chat shows, or 'the media' can be enough to the creation of a new public sphere (Mitchell, 2003).

Similarly to the concept of public sphere, Pugalis (2009) bridged the concepts of 'public space' and 'public realm' with the concept of 'street scene', defining a space's quality through its social mechanisms and individual representations, referring its usefulness for the measurement of a space's public life, the assessment of its social experiences and the provision of insights concerning its economic health and cultural vibrancy.

Moreover, the political community often presupposes the recognition of a sphere of common concerns and subsequent discourse, using for that matter the term 'public domain'. Its discovery may be seen as the major achievement of the Enlightenment, which by the legitimation of democratic processes and the creation of the "fourth state" of the press, led to the creation of a shared sense of the "public" (Friedmann, 1987, p. 24). Since then, the problems that rise to public awareness are, by definition, of general concern. This means that the public domain abridges the issues traditionally associated with the public space, sphere, and realm. In fact, for Sennett (1992), as the population lost a sense of itself as an active force, the public domain has been regarded as meaningless. In the end, the public domain appears as an abstract space without any kind of concrete physical or even regulatory attributes.

All the issues regarding public space, domain, sphere, and realm are orientated to ensure public order. Being primarily related to public safety and control, public order is the practice where the public is ordered, managing thresholds, and setting boundaries, flows and events. It is maintained both explicitly (i.e. by the police) and implicitly (i.e. by those who work in the public realm and, more generally, by the general public) (Oc & Tiesdell, 1999).

This literature revision regarding the concepts revolving around public space leads us to the last main concept, the one of 'publicness'. For Francis (1989), this concept is established by civility and our collective sense, forming one's right to use public space and which are shaped and formed by it. During the 1990's, the concept was left apart of the public space discussion. This situation persisted up until recently when it was brought again to discussion. This change is visible in a new branch of explanations about the symbolic value of the term. Therefore, and summarily, publicness can be easily understood as the essential features and qualities that give a public space its specificity, what can make a given space be in fact called a public space (de Magalhães, 2010). According to Varna and Tiesdell (2010), the publicness of a place can be understood at two levels, a conceptual and a practical one. The conceptual level is concerned with the different individual understandings of publicness and the academic disciplines documenting them. In fact, social and humanities disciplines have been giving increasing attention to public space, although each one relates to it differently, viewing it through different lenses and with particular interests and concerns. On the other hand, the practical level relates to the production of real public places that, in turn, become the sources of perception and interpretation by the 'public'.

In this same study, publicness was also presented under two additional distinct interpretations. On the one hand, an inductive (critical realist) approach is focused to understand "what is out there", leaving apart individual subjective assessments and focusing on particular aspects of these spaces. As a result, this type of approach tends to rely on the perspectives of different disciplines, seeking common themes to the definition of publicness and, therefore, what makes a space public. As the different concepts often overlap, the different features of public spaces, especially the ones that change over time, are not effectively integrated, leading to weak analysis techniques. Rather than idealizing public realm with some normative values or some romantic images of the past, understanding public life from the users' viewpoints is by far neglected and less studied (Carr et al., 1992).

On the other hand, a deductive (interpretivist) approach views the 'reality' as the product of society, built under constant influence from people's self-awareness and human interaction. Publicness is therefore in the "eye of the beholder" (ibid., p.578). If people think that a given place is a public place, it is in fact public, regardless of whether the concept of public is understood in terms of rights, physical setting, or ownership. In this perspective, an emphasis on 'multiple publics' (Young, 1990) is created, through a series of separate yet overlapping, public realms involving different social-economic, gender and ethnic groups (Calhoun, 1992; Carmona et al., 2003; Featherstone, 2000; Sandercock, 1998). The creation of universal access, and therefore defining a single public realm, cannot exist. The publicness of any place must thus necessarily be assessed in terms of it being 'more public for more publics', in an attempt to include both inductive and deductive approaches (Varna & Tiesdell, 2010). Several studies have been developed to assess the main features that define publicness (Akkar, 2005; Németh & Schmidt, 2011; Varna & Tiesdell, 2010), which will be addressed further on this thesis. A graphical representation of concept of public and associated terms is represented in the following figure (Figure 2.2).

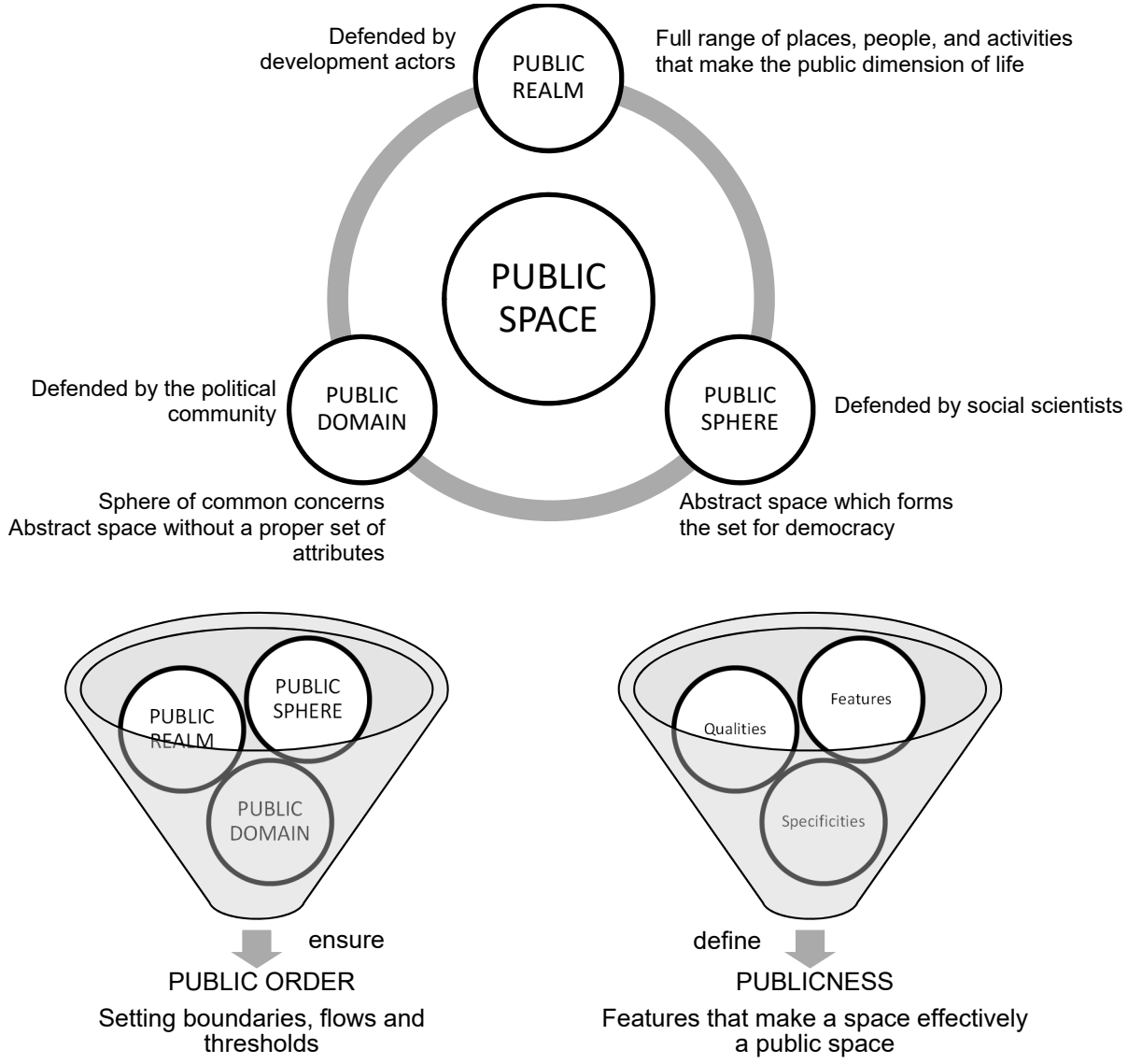


Figure 2.2 – Summary of public space related concepts

2.3. THE EVOLUTION OF PUBLIC SPACE

2.3.1. THE BIRTH OF PUBLIC SPACE

Since the dawn of modern civilization, the city has been characterised by a distinction between public and private areas, although what is considered to be private and what is considered to be public varied from culture to culture and within cultures over time (Madanipour, 2003). While some public spaces developed naturally, either by spontaneous phenomena of repeated use or by a certain concentration of people, others were the result of the urban planning process (Carr et al., 1992). In this last case, public spaces can indeed be the result of a deliberate intention, or just the result of urban design particularities, such as the spaces left open by the arrangement of buildings. The study of the evolution of public space can be seen by various perspectives, ranging from a more architectural evaluation, by the study of the design and relevant physical attributes (Alves, 2003; Bentley et al., 1985; Cooper-Marcus et al., 1998; Lang, 2005; Moughtin, 2003; Project for Public Spaces, 2000; Whyte, 1980), entering with a strong emphasis on the relationship with the enveloping built elements and the feelings transposed into users (Carmona et al., 2003; Carr et al., 1992; Crankshaw, 2009; Francis, 2003; Gehl, 2001; Jacobs & Appleyard, 1987; Jacobs, 1961; Lefebvre, 1991; Lynch, 1984; Madanipour, 1996; Montgomery, 1998; Tibbalds, 2001; Worpole & Knox, 2007), its articulation on the overall urban structure (Lynch, 1960), or into the study of sole relationship between the public and private spheres (Fraser, 1992; Kohn, 2004; Lofland, 1989; Madanipour, 2003; Németh & Schmidt, 2011; Sennett, 1992). This analysis will focus on the evolution of the aspects mostly related to the operation and articulation with the public/private connection, as a more 'artistic' evaluation flees from the overall remit of this work, as well as of the professional and educational path of the author.

The first human agglomerations were established in areas that provided good conditions for agriculture and fishing, marking the end of nomadic lifestyle and the birth of sedentary living. The birth of trade also gave rise to private property and hence the need to protect the goods. The division between private and public spaces was then created, forging the path to the creation of organized society.

One of the best-known examples of public space is perhaps the ancient Greek Agora, the main public square and the meeting place of the town (Figure 2.3), serving as a place of assembly, ceremonies, and the overall social life of the city. Starting as a mere open space, it was soon surrounded by several public buildings, generating an urban centrality and drafting the central square that would be born several centuries later across European cities. The concentration of civic activities in the centre and leaving the rest to residential uses was a feature that Greek cities shared with the older civilizations of the Near East (Madanipour, 2003, p. 193), such as the public marketplace of Mesopotamian cities of 2000 B.C. (Carr et al., 1992).

The Roman cities represented an evolution to the Greek tradition of public space building with the image of the forum, an urban element combining the functions of the Greek agora and acropolis. By supplementing it with colonnaded main streets, this process of city building reflected a rigorous spatial order (Carr et al., 1992).

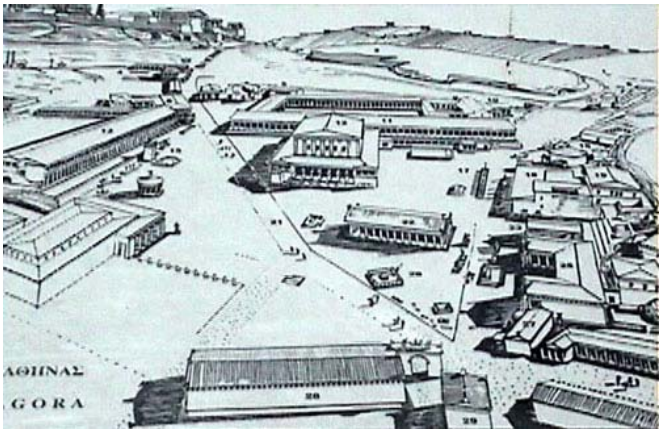


Figure 2.3 – Greek Agora (http://www.greeklandscapes.com/images/destinations/agora/agora_plan.jpg, accessed on 01/07/2010)

2.3.2. PUBLIC SPACE THROUGH TIMES

The search for safety after the fall of the Roman Empire led a large number of previously urban citizens to flee from cities into the safer countryside. Built around castles and abbeys, representing a separation between secular and spiritual spaces, the walled town, needed to secure the relentlessly growing settlements, created the grounds for the revival of the urban marketplace. The city squares, as the main public spaces of the time, were decorated with fountains, monuments, statues and other works of art and were used for public celebration, state proceedings and exchange of goods and services.

However, as the medieval city was almost entirely a place of trade, struggles between public and private interests were constant (Madanipour, 2003). Surrounding the narrow and bustling streets, and in the lack of restaurants, bars and hotels, the home was a public place, a meeting place for a range of activities, as well as a residence for a large household, which could include employees, servants, apprentices, friends and protégés. By turning the public/private distinction into a mere façade, life was, indeed, 'lived in public' (Madanipour, 2003, p. 77). Also, and as there was no such thing as a rigorous urban planning scheme, the cities of this era, namely its physical organization, were configured according to the needs of their residents. Therefore, the questions of human scale and functional adaptability were very strong elements in this period. This organic form of city building shows an unconscious reversal to the Greek method of city building.

The Renaissance, following strong artistic values, and what followed since then have revived the Roman ideal (Madanipour, 2003), mainly with the great plazas of this era, carefully planned and with great concern over its formal design. In addition, it reinforced the role of the recently created public institutions and buildings. In 1748, the Italian architect Giambattista Nolli completes the first detailed cartographic map of the city of Rome. The 'La Pianta Grande di Roma' ("the great plan of Rome") is an ichnographic map depicting the city in its precise architectural scale (Figure 2.4). Two major aspects characterize this piece. The first is the distinction between the buildings as solid elements represented in black, and the empty spaces that surround them, i.e. streets and squares, in white. However, Nolli went further in his characterization of the city and discriminated the interior of public buildings, represented in white as well, similarly to external public spaces. As private, public, and publicly accessible private spaces are therefore easily distinguishable, Nolli effectively mapped the public sphere of eighteenth century Rome. The city of 'harmony and symmetry' (ibid., p.198) was the prime order for city building. Baron Haussmann's nineteenth-century redesign of Paris is seen as the culmination of this movement. This represented a clear distinction between public and private spaces, and became the norm for the upcoming centuries.

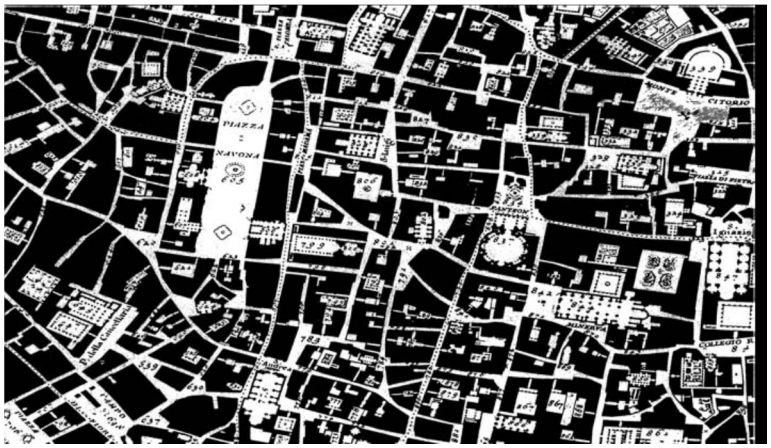


Figure 2.4 – Nolli's representation of Rome (Lang, 2005, p.10)

The urban growth since the dawn of the Industrial Revolution, due to the migration of thousands of former rural workers, triggered the development and mass implementation of the broader urban planning practice. Cities, characterized by a strong fabric of heterogeneity, ensured the encounter with difference (Mitchell, 2003). Freedom and individual power were therefore the main results of this new commercial society (Hill & McCarthy, 1990). As cities grew and developed networks of sociability, places where strangers could regularly meet were necessary. The centrally located urban squares, the major public spaces of European and American cities at the time, were clearly insufficient. The creation of the practice of landscape architecture, particularly in England and the United States, forged a time characterized by the emergence of the parks movement and the establishment of "massive urban parks and of the first attempts at making streets fit for the special purpose of pedestrian strolling as a form of relaxation. It was the era in which coffee houses, then cafes and coaching inns, became social centres; in which the theatre and opera houses became open to a wide public" (Sennett, 1992, p. 17).

Due to widespread poverty and weak transport networks "the poor, the working class, and the well-to-do typically lived in close proximity" (Carr et al., 1992, p. 63). The creation of these new public spaces meant the extension of urban amenities beyond the elite classes, who could afford regular travels to the uncongested countryside, and into the labouring classes, creating an apparently more equalitarian society. This era also brings us the figure of the 'flâneur', who, by wandering through the streets, observes the city and its inhabitants, in a seemingly uninterested and carefree way. In this process, he is constantly invaded by new experiences and develops new perceptions (Banerjee, 2001; Featherstone, 2000), representing therefore a symbol of the changes that modelled urban growth throughout the nineteenth century and beyond.

Despite these efforts, this new commercial society was, in fact, "a society of strangers" (Hill & McCarthy, 1990, p. 38). The bourgeois attempts to establish a civilized society out of a new environment here considered by Sennett (1992) as the golden age of public life. Still, this era also coincided, according to Áries, with the "birth of the modern family and its winning over individualism" (Madanipour, 2003, p. 103). The novelty and intensity of modern life, subjecting the modern individual to mental pain and distress, created a need to be left alone, identified as the right to privacy (Carr et al., 1992; Madanipour, 2003; Parent, 1983).

Public space was since then addressed with different levels of concern. At the time usually known to generate fears, "fears that derive from the sense of public space as uncontrolled space, as a space in which civilization is exceptionally fragile" (Mitchell, 2003, p. 13), the 'move to the city' started to be

associated with a great sense of loss for something that the countryside, or 'wild nature', provided, generating a 'rural nostalgia' and a tradition of 'anti-urban' literature (ibid., p.iv). Almost invariably the metropolis was seen in negative terms: "unsanitary, overcrowded, dark, noisy, dangerous, criminal, immoral, anarchic, overpowering and cosmopolitan" (Parker, 2004, p. 52) but also "full of anonymous crowds, segregated and explosive" (Madanipour, 2003, p. 155).

Modernist planning promoted the reduction of these fears through a decentralization process of the cities. Accordingly, the town planning movement of the nineteenth century was strongly influenced by the Utopian schemes for new settlements, persisting into the twentieth century, where two visions of the ideal urban future were especially influential – Ebenezer Howard's scheme for Garden Cities and Le Corbusier's Radiant City. Through this new pattern of space consumption, usually known as suburbanization, the middle class were allowed to have bigger houses and therefore larger personal and intimate territories (ibid., p.47), reducing the need for public space usage. For Alfred Kahn (1966), with their private consumption, each consumer could be collaborating for the destruction of public space. By coining this as the 'tyranny of small decisions', he argues that if people predicted this situation, or, at least, moderated their private interest, they would have acted differently.

Modern town planning was then characterised by 'utopian comprehensiveness', that is, a drive to build or rebuild whole cities or large parts of them. Masterplans combining different proposals and ideas represented the wish to create a gracefully ordered urban form, being the "complement to the geometrical simplicity of modern architecture" (Taylor, 2004, p. 75).

The CIAM (International Congress for Modern Architecture), founded in 1928 to save architecture from formalist preoccupations, looked to Taylorism, Fordism and similar systems of scientific management as tools for the social renewal of the city. The Athens Charter, published in 1941, stated that any city should be analysed according to four basic functions: dwelling, work, circulation, and recreation and leisure (Rykwert, 2000, p. 175). Seeking a redefinition of the relationship between public and private spaces, the CIAM proposed an urbanism characterized by overly large city blocks, labelled superblocks, where large isolated buildings stood surrounded by large and visually sterile spaces and wide thoroughfares with intense car/pedestrian traffic segregation, and interior common spaces resulting in housing divorced from streets and central ownership of land (Figure 2.5). The vast expanses of open spaces, created not only for aesthetic but also for hygienic reasons, "could be left under-used, only to be watched from the top of high rise buildings or from the car windows" (Madanipour, 2003, p. 202).

Figure 2.5 – Le Corbusier modernist plan for Paris (http://www.mheu.org/expos/resources/imageBank/4/830,L2-14-46.jpg, accessed on 01/07/2011)

Le Corbusier advocated that the street was a superfluous element in the cityscape, and therefore had to be eliminated. The idea of public space as a site for display, developed during the nineteenth century was therefore lost, as it was limited to the bare minimum. The modernist city was following the logic of the buildings' interior, giving priority to salubrious interior space, which could then be mass-produced to create machines to live in. The emphasis of the CIAM was then "on buildings and what goes on within buildings that happen to sit in space, not on the public life that takes place constantly in public spaces. The orientation is often inward. Buildings tend to be islands, big or small" (Jacobs & Appleyard, 1987, p. 113). This meant for public space the removal of nearly all sorts of opportunity for social interaction. As it was known to the Italian Fascists, whoever controlled the streets controlled the city (Atkinson, 1998). The Modernist Movement, therefore, presented a serious threat to public space as the centre of the urban framework.

After the Second World War, important reconstruction projects began in the countries devastated by successive bombings. It was only at this time that the modernist ideals could be tested and become a reality. Hall et al. (1973, Vol.2, p.64, in Taylor, 2004, p. 229) suggested that there were two basic objectives to post-war planning at the urban scale: a desire to improve the quality of the physical environment of urban areas and a desire to improve accessibility within towns. While Europe opted for the 'towers in park' model, the United States went all out of an urban pattern based on a combination of the garden and functional city models in the form of the suburb. In other words, the Utopianism of post-war planning thought went hand in hand with a 'comprehensive' approach to planning cities. Implicit in both proposals was the Utopian suggestion that town planning should turn its back on existing cities and create an entirely new kind of urban settlement, although the debate focused between Howard's garden city and Corbusier's 'radiant city' (Taylor, 2004).

By the early 1950's a new scope of urban problems emerged. Neither the garden city nor the functional city offered a satisfactory urban habitat. Planners were realistic enough to recognize that the world could not be completely reconstructed anew and that for the most part they had to deal with cities as they found them. The widespread purchase of automobiles, and the dream for the middle class to own a parcel of land providing outdoor green space, started the suburbanization process, particularly evident in the United States, where there was not only more available space around major urban centres, but also a need to break from the pre-war era and living style. The expected result was the decline of the middle classes usage and support for urban public parks, which became the domain of the working class and the poor (Carr et al., 1992), those who couldn't afford the costs of suburbanization. Although suburbanization represented a break from the previous lifestyle of urban areas, and the relation between citizens and the built environment, there was still a need for socialization. As a consequence, the shopping mall appeared at the time as the major forum for the public life of the 'suburbanites', changing the overall living patterns.

Beginning around the mid-1970's, a shy return of young professionals to older urban neighbourhoods, in a process known as gentrification (Cameron, 2003; Jacobs, 1961; Lees, 1998; Smith, 1996), contributed somewhat to the emergence and revitalization of urban areas, and consequently to the adjacent public spaces in numerous cities. Also, the end of the twentieth century brought to public conscious the failure of this process of urban expansion, New Urbanism came as a reaction to sprawl, based on principles of planning and architecture that work together to create human-scale, walkable communities (Amin, 2008; Congress for the New Urbanism, 1996). Pedestrian malls and car-restricted zones are also seen as related phenomena. But the new urbanism, known also as 'traditional neighbourhood design' or 'neo-traditional development' is much more than a planning movement as it seeks to "recreate the social bonds that its advocates believe have been lost in the maul of unfettered urbanization by building in 'social capital' to building design, street layout, and community facilities

and resources" (Parker, 2004, p. 65). New Urbanism, then, tries to return the ideal of public space for the public.

Nevertheless, it is not only across time that we find differences in the distinction between public and private places in the city. Across the world, there are clearly identifiable distinct urban configurations, according to the emphasis given to public or private experiences in any given place. In Arab territories, for example, it is visible a more enclosed structure, where private and closed spaces prevail. Here, the public urban squares, common in European cities, but also the figure of the street, see the courtyard of the cathedral mosque as its equivalent (Madanipour, 2003). In addition, small public squares exist within the neighbourhoods, at its inner crossroads, where they can be roofed and arcaded as shopping streets, or in front of the public buildings, playing an important role in the social life of cities. The space of the city is also clearly divided at a functional level, between public and private realms. The public realm, often in the town centre, contains all the common activities of the town, such as trade and commerce, education, religion, and administration, leaving the private realm confined to the limits of the house. The Middle Eastern city is, in fact, "composed of a puzzle of spaces, organised around courtyards, which are the scenarios of domestic life" (Goitia, 1996, apud Cruz, 2003, p. 85). The Islamic city, although similar to the Arab city, adds the meditation area of the mosques as the grounds where public life develops.

On Western cities, the opposite approach is found. Instead of the maze-like and severely private structure of the Middle Eastern cities, we find streets and squares as the essential elements, from which the private buildings are organized. Beyond these basic principles, it is identifiable a distinction between urban public spaces descendent of the classical tradition, such as the Greek polis and the Roman civitas, and the domestic city of Nordic tradition (ibid.). In the first one, the public urban experience is more intense, due to the dimension and relative importance of urban parks, streets and squares, as in the second one, the open public spaces are scarcer and of weaker relevance.

From the Greek agora to the contemporary mall of the 21st century, the different public space forms are a direct reflection of society's public and private values. Throughout history, communities have developed public spaces suited to their needs. Nowadays, even more than ever, the rate of evolution has been staggering, and new phenomena are shaping the face of our public spaces.

2.3.3. Public Space in the contemporary city

Across history, public space formed the backdrop for public life, for commercial transactions, social exchange, entertainment, protest, and contemplation. As the Western society became more introverted and private, such spaces became under threat, even though there was still a need to provide amenities for public life to take place. Sennett (1992) also observed this decline in public life expressed in the urban space of our time. For him, the streets and squares as social centres have been replaced by "suburban living rooms" (p.28) and the public spaces of the city abandoned, to become only places "to move through, not to be in" (p.14). Although some public spaces have played the role of distinguished nodes in the city and its social life, the truth is that the circumstances changed and some of them lost their importance, left to abandonment or have not found its desired role (Madanipour, 1999). Throughout history, the way urban space has been divided into public and private reflected, and influenced, social relationships. In all these terms, "public space is produced through a dialectic of inclusion and exclusion, order and disorder, rationality and irrationality, violence and peaceful dissent" (Mitchell, 2003, p. 51). Although, conceptually, the functions afforded by the built environment have not changed over the millennia, what changed is what its users, policy-makers and designers consider important (Lang, 2005).

This resulted in a city of "closed, defended islands with blank and windowless façades surrounded by wastelands of parking lots and fast-moving traffic" (Jacobs & Appleyard, 1987) ironically representing the same ideals of the Modern movement and that were so fiercely criticized (Figure 2.6). The public spaces of many cities became empty deserts, relegating public life to these internal locations and dependent upon planned formal occasions. The central public spaces of the city used to integrate diverse political, cultural, and economic functions and, as these spaces multiplied across the cities, they became more and more specialized. It is undeniable that contemporary urban principles led to the explosion of a number of large public and open spaces in the city, "unspecializing and becoming an instrument to sell the city" (Madanipour, 2003). The spread of these "scenic enclaves eventually reduces the city to a map of tourist attractions" (Boyer, 1992, p. 192), reducing public space's capacity of connecting the different urban spaces, and imposing an imaginary and artificial order. The progressive privatization of public space became therefore creation of a 'public realm deliberately shaped as a theatre' (Crilley, 1993), where every single type of activity or expression is carefully staged.

Figure 2.6 – Blank facade of a shopping mall in Porto, Portugal

Along the years, we can find some factors associated with the decline of most of these urban public spaces such as globalization, privatization, urban dispersion, reduced economic productivity and ease of communication by electronic means (Banerjee, 2001; Ellin, 2003; Madanipour, 2003). Globalization has had numerous influences on the urban grounds. The emergence of the concept of networked cities led to an increased competition between urban centres in the global markets, in order to attract investment. This investment "may be made by companies searching for better returns on their investment and a better quality of life for their employees, but also by the employees and by middle class returning to the cities looking for new lifestyles" (Madanipour, 1996, p. 101). The emergence of market economies culminated in growing capitalization processes associated with urban development, with the main goal of achieving larger profits. This led to the rise of Zukin's (2009) 'hegemonic global urbanism', characterized by the development of larger and larger projects, often targeting the maximization of building indexes and frequently ignoring the need for green and overall open spaces. If some particular development had some symbolic value for their developers in the past, it is now more and more the exchange value in the market that determines their interest. As space is stripped out of its emotional and cultural value, and only developed through people's use over time, it is treated as a mere commodity (Kohn, 2004; Madanipour, 1996; Sorkin, 1992). Governmental and municipal authorities, faced with a lack of financial resources, moved into large-scale privatization schemes. Public services and goods, initially supported and managed by the State were delivered to private management,

becoming subject to the wills of its new 'owners'. This privatization process generated, in fact, a fierce debate, set to be explored in the next chapter.

Lefebvre (1984, Chapter 2, apud Parker, 2004) saw the city as a location where use value and exchange value met and combined as a formal system or as 'relations of production'. As the intensity of capitalism development grew, the transformation of space and the location of activities became increasingly commoditised. He termed the capitalist city a bureaucratic society of controlled consumption, a term popularized as 'consumer society'. As it incorporated successively larger spheres of the life of households into the money economy, capitalism "colonized civil society" (Friedmann, 1987, p. 387). In other words, "the capitalist city involves the transformation of the use-value of space into the exchange-value of land while at the same time providing the means to produce and exchange other types of commodities" (Parker, 2004, p. 104). Despite the fact that in the majority of western countries, the importance of public space functions on a proper urban operation, together with the "progressive codification of the roles of previous collective and philanthropic organizations", which "led to the provision and management of these spaces to become a public service, together with health, education, social housing and welfare" (de Magalhães & Carmona, 2009, p. 114), the sheer scale of this competition and fast pace of change shifted the approach a large number of central management authorities.

On a different note, more and more cities previously characterized as industrial centres and run-down places are now promoting themselves as tourist destinations. The creation of new public places is also, therefore, part of the larger process of creating spectacle in the city (Madanipour, 2003). Public space becomes, for that reason, threatened, and starts to appear speckled on the urban landscape, as a consequence of occasional 'surgical interventions', or simulated through semi-public spaces, commercial centres, theme parks and closed residential facilities (Cruz, 2003). These new developments, "advertised as new 'commons' and as a third-way alternative to the sterile opposition of the private versus public space, are anything but 'common' in the sense of allowing public access" (Low & Smith, 2006, p. 9). Banerjee (2001) calls these 'pseudo-public spaces' as, although its access and use are in fact public, they are available only as a privilege and not a right.

However, globalization did not only affect the 'supply-side'. The urban population, the drivers of the 'demand-side', by having a better connection to the outside world became fond of spaces that reinforced this global connection, identifying themselves with new space typologies. New information technologies, pushed by globalization, provided new means of long-distance personal communication and led to the social enclosure of public spaces. Activities that once occurred in the public realm are increasingly satisfied now inside the home with the television or the computer. Ellin (2003, p. 54) makes an interesting set of assertions about this matter by saying that:

> "If we do go out, we do so in the strictly controlled settings of the shopping mall, theme park, or sports arena. We no longer go out to mingle with the anonymous urban crowd in the hope of some new unexpected experience or encounter, a characteristic feature of earlier urban life. Unexpected experiences and encounters are precisely what we do not want. We go out for specific purposes, with specific destinations in mind, and with knowledge of where we will park and whom we will encounter."

But the technological development also affected the definition of the boundaries between public and private space. In the recent years, given the rise of the web 2.0 and producer/consumer profile, what was private has turned into the public domain and what was considered public, that is, outside the boundaries of the computer screen and the private room, etc., has become truly private. Everything considered being off the grid, i.e. not connected, in all the senses means just that. More recently, there have been attempts in the creation of a new kind of public realm, in par with the on-going technological developments. The

growth of information flows in the contemporary city was the trigger to the rise of informational space (Crang, 2000), a space without physical boundaries and characterized by an almost infinite number of connections, organized in a semi-chaotic fashion.

Nevertheless, it is also expectable that the expansion of these new networks will converge in the modern metropolis, where more people share the same physical space, meaning an increased demand for the use of the urban public grounds. Despite the rise of this impersonal exchange, face-to-face interaction is still the most powerful form of communication (Madanipour, 2003) and will in fact gain new value as the centre of all human activity (Angotti, 1995) and as the prime location for information exchange. Just as Ariés (in Madanipour, 2003) defended that in the 19th century city, family won over individualism, in the past decades as the communication forms multiplied and individual members of the household established direct links to outside world, the interior space, the family and the individual are not currently protected in the same way as before, meaning therefore the 'victory' of society over them. These days, public space is embedded with a new symbolic dimension, representing the last bastion against widespread globalization and privatization phenomena that have spread throughout cities. "The human condition has become the urban condition" (Amin, 2006, p. 1012).

2.4. THE SPECIFICITIES OF PUBLIC SPACE

2.4.1. PUBLIC SPACE ROLE

Although individual buildings, and thus architecture, are important to the quality of towns, it is the "whole ensemble of buildings and spaces in a town, including its parks and gardens, which govern how we experience it" (Taylor, 2004, p. vii). Even though cities are composed of both public and private spaces, the first ones are responsible to envelop it with identity and meaning. Public spaces provide vital functions to the operation of the urban system. By providing linkage between the city's different spaces, by functioning as traffic corridors, or by simply constituting areas for leisure, contemplation and socialization, the availability of public spaces became fundamental to the well-being of the contemporary urban population. Indeed, the most obvious benefits public spaces provide for city living are of social nature. Space and society are clearly related as it is "difficult to envisage 'space' without social content and, in an opposite interpretation, to imagine society without a spatial component" (Carmona et al., 2003, p. 106). Many commentators previously focused on the city's public places as sites and symbols of politics and democratic protests (Kohn, 2004; Madden, 2010; Mitchell, 1995; Sorkin, 1992). It is not by chance than under totalitarian regimes, one of the first rights to be lost is the right to gather in public and engage in democratic processes with the overall public. Even if today the internet has a tremendous power in mobilizing people and spreading messages, the large public square is still the central location for any major public outburst, as was seen, for example, during the occupation of Tahrir Square in Cairo in 2011, or Independence Square in Kiev in 2014.

With this in mind, Carr et al., in 'Public Space' (1992), describe the role of public space in public life as providing basic human needs. These "democratic spaces" are described as those that are accessible to all groups and provide freedom of action, while protecting their rights. Therefore, "a public space can be changed by public actions, because it is owned by all" (p.19). The authors regard public space as the 'common ground' where people, whether in their everyday life or in special occasions or festivities, carry out the activities that make part of the community. In fact, public spaces are understood as places for "intersubjective communication, to strengthen the arenas in which a civil society can develop" (Madanipour, 1996, p. 220). This civil society is not only developed but also founded in public spaces as, in Lofland's (2000, apud Németh & Hollander, 2010) thinking, public spaces can educate the city-dweller about the 'other' and teach true urbanity. This goes in line with Walzer's (1986, p.470, apud

Madanipour, 2003) earlier understanding that "public space is the space we share with strangers, people who aren't our relatives, friends, or work associates. It is the space for politics, religion, commerce, sport; space for peaceful coexistence and impersonal encounter". Walzer used, for this matter, the term 'open-minded spaces' to describe the overall public spaces where democracy is enacted, i.e. "the stage upon which the drama of communal life unfolds" (Carr et al., 1992, p. 3). In these interpretations, the character of public space not only expresses but also conditions our public life, civic culture, and day-to-day discourse. In the end, although public space is generated by our free activity, that same activity is conditioned by this space (Mensch, 2007). It therefore functions as the scenario for Lewis Mumford's (1937) 'urban theatre' or Jane Jacobs' (1961) 'street ballet'.

A city's most prominent public spaces are often emblematic of the city itself and reflect whether its citizens relate well to the city and to each other. These public places can serve as 'third places' (Oldenburg, 1999) and are often associated with certain cultures and historical eras, as "Paris has its sidewalk cafes, Vienna its coffee houses, Germany its beer gardens" (Carmona et al., 2003, p. 114). The existence of public life is, in fact, a prerequisite to the development of public space and for a given space to be a public space, people who talk about it, use it, and reimagine it must connect to the nonphysical processes that bind it to our public life, to "patterns of law, speech, representations, policy, distribution, and economics" (Miller, 2007, p. xxii).

Among all types of public and open urban spaces, the ones that provide a greater number of benefits, mainly to its users, are the ones integrated in the city's green structure, i.e., its parks and gardens. These specific types of urban spaces, routinely associated with environmental and health benefits, are often common terms when speaking about the quality of life of a particular city. The environmental range of benefits represents the most universal aspect of public spaces as they affect the entire urban population and not just their direct users. The health benefits of urban green space stem both from the opportunity to engage in healthy outdoor exercise and from the psychological effects arising from the ways over which they allow an escape into a less stressful and more relaxing environment (Swanwick et al., 2003). Botkin and Beveridge (1997) argue that vegetation is essential to achieve the quality of life that creates a great city and that makes it possible for people to live a reasonable life within an urban environment. The appearance of fauna, e.g. birds and fish, should also be accounted for in recreational values. Also, the diversity of human activities in cities creates and maintains a large variety of habitats, some exclusive to these locations. Thanks to this richness, urban landscapes often have a high diversity of animal and plant species, even including rare and threatened ones. The green urban structure is, in some way, also connected with urban design, as it usually connects spaces with different features and scales, where the great urban parks, such as the Central Park in New York or Hyde Park in London, can be seen as good examples.

Many other studies refer to the social benefits of urban green space. First, it has both an existence value, because people know it is there, and a use value, for a wide range of different activities (Swanwick et al., 2003). It provides neutral ground available to all sectors of society and can become the focus of community spirit through the many and varied opportunities provided for social interaction while also contributing to child development through its capacity for outdoor, energetic, and imaginative play, and may positively influence the behaviour of both individuals and wider society (ibid.). The recreational aspects of these public spaces, with possibilities to play and rest, are perhaps its highest valued service provided to the city (Figure 2.7). Nevertheless, certain age groups value public space in higher terms. In Worpole and Knox's (2007) study regarding the social value of public space, the authors note that "there was a clear rhythm to the day, with older people shopping in the central market early on, children and young people out at the end of the school day, and young adults dominating the town centre at night".

This renovation of the public is the main catalyst for adequately 'populated' spaces, contributing to a reduction in crime levels and anti-social behaviour (Jacobs, 1961).

Figure 2.7 – Elderly using public space for socialization

Although less tangible, one can also identify economic benefits resulting from the existence of these areas including both on-site benefits, such as direct employment and revenue generation, and less tangible off-site benefits, including effects on nearby property prices, contributions to attract or retain business in an area and also an important role in attracting tourists (Madanipour, 2003; Swanwick et al., 2003; Wooley, 2005), if these areas remain properly maintained. Also, the promotion of sustainable modes of transport encouraged by increased public space usage (Gehl & Gemzoe, 2001) can have a say in the reduction of pollution and traffic levels.

Still regarding the social value of public spaces is the concept of social capital. The use of the term goes back into the early twentieth century, first used by Lyda Hanifan, a school reformer in West Virginia in 1919. However, it was only in the 1960's, by the hands of Jane Jacobs (1961), where she saw the neighbourhood networks forged by long-term residents as a city's irreplaceable asset, that the concept attained its deserved importance. Social capital has been studied in different perspectives, such as being used as a tool to understand financial and social capital (Coleman, 1988; Robert & Hornburg, 1998). Robert Putnam, who defended a link between social and economic capita, and Bourdieu, on a more social perspective, defined social capital as "resources based on connections and group memberships" (Madanipour, 2003, p. 211), and Lang and Hornburg (1998, p. 4) defined it as referring to "the stocks of social trust, norms, and networks that people can draw upon in order to solve common problems". Michael Woolcock summarizes the position of major contributors by defining social capital as 'the information, trust, and norms of reciprocity inherited in one's social networks' (Woolcock, 1998, p. 153).

So, social capital commonly refers to the stocks of trust, norms and networks that people can draw upon in order to solve common problems, and its degree of involvement is often termed social glue (Robert & Hornburg, 1998). These links, understood as social bridges, are vital as they not only connect groups to one another but also give members in any one group access to the larger world outside their social circle through a chain of affiliations. Portes and Sensenbrenner (quoted in Woolcock, 1998, p. 165), argue that social capital is high in socially weaker groups with distinct cultural characteristics and a higher propensity for being the target of social and economic discrimination. Social capital is frequently seen by the political sector as a legitimate goal for state intervention towards the development of a strong

civil society (Madanipour, 2003, p. 223). Public space has an essential role in the promotion of social capital and understanding social capital requires exploring the link between people and places.

Mitchell (1995) refers that as new groups are claiming access to the overall rights of society, the homogenization of the public continues. This has the tendency to 'disneyfy' the space, creating landscapes where every interaction is carefully planned (Mitchell, 2003; Sorkin, 1992; Wilson, 1992; Zukin, 1991). Thus, the reduced availability of public space and public life reminds us of the declining significance of the public realm. Many social and civic functions, traditionally characteristic of public realms, have been transferred to private spaces. Activities that were once only available in collective and public forms have increasingly become available in individualized and private forms, while the use of public space has been challenged by various developments and changes, such as increased personal mobility. Atkinson (2003) defends that the street needs to regain its historical value for the production and transmission of local identity.

Nevertheless, public space is made to be used by people. If people start to reduce its public space usage, then there is less incentive to provide new spaces and maintain existing ones. With a subsequent decline in their maintenance and quality, public spaces are less likely to be used. Wilson and Kellings' (1982) broken windows theory has for long stated that if a window in a building is broken and left unrepaired, the rest of the windows will soon be broken. This premise can be directly translated to public spaces, signalling the risk of amplifying a vicious spiral of decline (Carmona et al., 2003; Oc & Tiesdell, 1998). Therefore, public space needs to be flexible to the social dynamics, as new forms of public life will require new spaces. In the end, urban planning incorporating "sustainable development principles would need to incorporate the social and economic needs of people, whilst at the same time making provision for the high-quality natural, semi natural and built environments which contribute to those needs" (Moughtin & Shirley, 2005, p. 86). These social dynamics are also reflected in the agents involved in the processes of consultation, design, or management of public, mainly regarding the involved actors. The following section will address these new dynamics.

2.4.2. Actors in Public Space

Public spaces are often considered participatory landscapes as "through human action, visual involvement, and the attachment of values, people are directly involved in public spaces" (Francis, 1989, p. 148). It is useful to think of the design and production of the built environment as a process that involves a variety of 'actors' or decision-makers, each one with rather different goals and motivations. To begin to understand the range of actors who make part of the overall public space it is important to understand the process that set how the city is built.

Zube (1986, in Francis, 1989, p. 150) identified three types of public involved in the public landscape. The first are the 'professionals', who are involved in the development of plans and policies. The second, the 'interested public', refers to those who perceive the plans as directly benefiting them, bridging the first and third group. The 'general public' is the third and largest category and includes people who do not have a role in the making of plans or policies. Knox and Ozolins (2007) four-way division into landowners, speculators, developers and consumers, although more focused in the physical process of urban development, also generates a comparable perspective. The supply process starts with the 'landowners', followed by the 'speculators' who seek to buy relatively low-priced land just before it begins to appreciate rapidly in value and to sell it just as it reaches a peak. 'Developers', on the other hand, decide upon the nature and form of new projects, plotting large parcels of land into smaller lots, installing the infrastructure necessary for a particular use, and selling the lots to builders, representing the demand side of the development process. People do not always react individually, as 'consumers',

to the choices available to them. Citizen-group protests over specific development projects and involvement in residents' associations are two of the most relevant choices over which the development process can be affected by a joint group effort. Although these two perspectives show the possibility of involvement of the public, its overall late introduction in the process is a strong indication to the possibility of similar processes in the production of public space.

Francis (1989, p. 152) used Zube's differentiation as a starting point for a finer distinction of publics. First, there are the 'users' who frequent public spaces and rely on them for social interaction, even if rarely directly involved in the design and management processes. On the other hand, many people pass by a given space without ever becoming users. These are then called 'nonusers' and their perception of the public space is important, as if the overall value of spaces is increased, this group can shift into the 'user' category. Moving away from the individual citizens, the group of 'space managers and owners' constitute a powerful and influential set. Either representing public or private entities, these groups are not only responsible for the daily functioning of public spaces but also take decisions regarding any possible changes that can or could take place. This does not mean that users cannot be involved in the construction or maintenance of a given public place. In fact, as Madanipour (2004, p. 280) states in his study about deprived neighbourhoods, the "participation of residents in public space maintenance and management can be a way of improving the physical environment and developing some social capital", meaning that their direct involvement can enhance the meaning of attachment. Another type of collective group, 'public officials', represented by one or several city or municipal authorities and departments, is charged with the overall quality of urban public spaces, normally its most important and meaningful ones. The interference of private managers in the public space arena is considered as one of the major challenges facing these actors. Finally, the group of 'designers', such as landscape architects, architects and urban designers play an influential role in shaping public space. Design is, most of the time, the main aspect regarding the definition of the behavioural rules of public space, communicating what is allowed and what is forbidden. In the same way that public participation is encouraged in the management of public spaces, involvement in the design process has the potential to increase the sense of attachment and ownership.

This division, although comprehensive, does not provide any strong insight regarding the intersection of these groups. As the impact of social production patterns is relatively insignificant (Madanipour, 1996), space users, the real beneficiaries of these projects and resulting spaces, are often left apart of the process, not due to deliberate withdrawal, but simply by a lack of knowledge of how to intervene and to use the available mechanisms to their benefit. According to Francis, there are well established and tested techniques for maximizing user participation in public environmental design, such as workshops, user consultancy, participatory mapping, and surveys. Participation is also a useful device in "articulating and negotiating between the often conflicting values of different groups in public open space design" (1989, p. 166). Lefebvre's (1991) 'right to the city' is a result of three interrelated entitlements: the right to physically access urban space; the right to express oneself and interact with others, i.e. the right to be social; and the right to representation and to a role of active citizenship, i.e. to a sense of urban belonging.

People should feel that some part of the environment belongs to them, individually and collectively, whether they own it or not. As a result, the urban environment should encourage people to express themselves, to become involved, to decide what they want and act on it, cheering public participation. However, not all citizens may want this as many like the anonymity of the city. Jacobs and Appleyard (1987) are not convinced that the freedom of anonymity is a desirable freedom as environments should be designed for those who use them or are affected by them, rather than for those who own them. So, public space in the modern city is charged with meaning and controversy. The values attached to public space are those with which the generality of the citizenry endows it. Citizens create meaningful public

space by expressing their attitudes, asserting their claims, and using it for their own purposes. It thereby becomes a meaningful public resource (Goheen, 1998).

Gans (1968, p.5 in Carmona et al., 2003) drew a valuable distinction between 'potential' environments, which provide a range of environmental opportunities; and the 'resultant' or 'effective' environments created by what people actually do within that setting. So, "while urban designers might create potential environments, people create effective environments. Rather than determining human actions or behaviour, urban design can be seen as a means of manipulating the probabilities of occurrence of certain actions or behaviours" (Carmona et al., 2003, p. 106). This right of personal freedom can be strongly interrelated with the new landscape of urban security (Németh, 2009; Németh & Hollander, 2010). With urban security comes a series of changes in the physical landscape of the city that can, in fact, harm the free access to public spaces. The ability to choose how to relate to the overall society is a result of the second entitlement of Lefebvre's 'right to the city'. This implies the chance to lead "an urbane, full and diverse life" (Marcuse, 2005, p. 782). Fortified landscapes have the ability to increase feelings of fear and distrust among society members, therefore destroying the social capital. Space owners and managers' decisions, regarding the restriction of the ability of free will or performance, condition an individual's opportunities for representation, appropriation, and participation on society, where the large range of public space types that comprise our cities can also be of influence.

2.4.3. Public Space Classification

Urban public spaces come in many shapes, sizes and types and numerous attempts have been made in order to classify public space according to a range of perspectives, ranging from sole physical design and major functions, to the way it relates to the overall society or it adapts to different economical and power conflicts. The physical design analysis of public spaces has a strong architectural and artistic background, where aspects such as formal composition and visual complexity are often used to assess the evolution of urban squares through times. Although interesting to provide additional insights on the classification of public spaces, as the main purpose of this study is to analyse the new challenges these spaces are facing in the contemporary city, this sphere of analysis was kept apart from this debate.

Although squares are the most relevant public space types as they are the most representative of the values of societies that created them (Giddings et al., 2011), much of the literature comes from limited and enclosed approaches and therefore do not recognize the large variety of spaces that shape contemporary cities (Worpole & Knox, 2007). One of the most prominent areas of distinction between the different spaces of the contemporary city come through the definition of the rights and responsibilities imposed to its users. In this perspective, the space's democratic access comes as key to its definition, in par with one of the three main publicness aspects defined by Margaret Kohn (2004). The most well-known of definitions related to use was developed some thirty years ago by Oscar Newman (1972) with the categories of 'public', 'semi-public', 'semi-private' and 'private' open space:

- Public open space: parks and plazas;
- Semi-private open spaces: those where a limited number of people use the space but where the ordinary public would generally not be welcomed. Examples include courtyards to houses or flats and communal gardens and play spaces;
- Semi-public open spaces: Spaces with limited opening times to the public or be generally accessed and used by particular groups within society, such as school playgrounds;
- Private spaces: spaces not accessible to the public.

Carmona and Wunderlich (2013) definition is a basic starting point in the intersection of public and private space and its possibilities for urban life (Table 2.1). It provides insights for the existence of a continuum of publicness, bridging the gap between public and private spaces.

Table 2.1 –Typology of rights and responsibilities (Carmona and Wunderlich, 2013, p.84)

Space type	Ownership	Access and use
Public space	Public	Always open and available
Public-private space	Public sector or pseudo-public organization (e.g. a charitable trust, university or community organization)	Public access is allowed, typically with some restrictions on use
Private space	Private	Not open to the public

Gehl (2001), on the other hand, does not distinguish between public and private spaces in terms of ownership, but rather on its location regarding the boundaries of buildings. For him, spaces outside or between buildings make the part of the public realm, with the interior of buildings making up its private counterpart. However, the contemporary phenomena of space privatization and the 'explosion' of privately owned spaces make this distinction somehow unsuitable.

The relationship between space and users can be important in the creation of distinct space divisions. For Lefebvre (1991), after a first moment of 'spatial practice', where space is organized and used, it evolves through 'representations of space', according to the dominant system of each society. This process culminates in 'representational space', lived through its images and symbols, result of distinct appropriation processes by distinct publics. Two types of public space, namely 'single-minded' space and 'open-minded' space, are suggested by Walzer (1986), in the ground of whether it is designed for a single activity or within a context of mixed use. The context on this experience of space is also behind the division of Gulick (1998, in Carmona et al., 2008, p. 60). Here, 'public property' refers to the traditional definition where the government or state formally owns space, which is distinguished from 'semiotic space', made of 'spatial identities' encouraging competition, and the overall 'public sphere', where citizens can interact both socially and politically.

Burgers (1999, in Carmona et al., 2008, p. 61), created its definition based on the target clientele of the different spaces' users, centred on its basic attraction features:

- erected public space: landscapes of fast-rising economic and government potential;
- displayed space: landscapes of temptation and seduction;
- exalted space: landscapes of excitement and ecstasy;
- exposed space: landscapes of reflection and idolisation;
- coloured space: landscapes of immigrants and minorities;
- marginalised space: landscapes of deviance and deprivation.

Similarly, Dines and Cattell (2006, in Carmona et al., 2008, p. 61) balanced their definition in the possibilities a space offers to its users:

- everyday places: the range of non-descript neighbourhood spaces that make up much of the public realm and the everyday venues for interaction;
- places of meaning: that differ from person to person and that relate to particular associations and meanings attached to particular spaces, both positive and negative;
- social environments: that through their design and uses actively encourage social encounters between users, both fleeting and more meaningful;

- places of retreat: that offer a chance for people to be alone with their thoughts or to socialise in small groups of friends;
- negative spaces: where some experience aspects of antisocial behaviour, including racism and disruptive activities that are often perceived as threatening.

Still, this analysis does not require such an abstract interpretation. For Francis (1987), during the 1980's, several new forms of open spaces have been developed based on the awareness that traditional types of spaces did not satisfy all recreational needs. As a result, urban spaces were allocated based on a distinction between 'traditional' and 'innovative' spaces (Table 2.2).

Table 2.2 – Francis' open space typologies (Francis, 1987, pp.78-78)

Space types	Characteristics
Traditional	
Public parks	Part of zoned open-space system of the city; often larger than neighbourhood parks
Neighbourhood parks	Developed in residential areas; may include playgrounds, sports facilities, and so on
Playgrounds	Playgrounds are located in the neighbourhood; frequently includes traditional play equipment; sometimes includes amenities for adults
Pedestrian malls	Street closed to auto traffic
Plazas	Open space developed as part of new building in downtown area; typically privately developed and managed
Innovative	
Community open spaces	Neighbourhood spaces designed, developed and managed by local residents on vacant land; not officially viewed as part of open-space system of cities
Neighbourhood open spaces	Space located in neighbourhoods, often near private open space
Schoolyards	Not normally considered part of open-space system of cities
Streets	Much of the publicly accessible open space of cities
Transit malls	Development of improved transit access to downtown areas
Farmers' markets	Open space used for farmers' markets or flea markets
Town trails	Connects parts of cities through integrated urban trails
Vacant/undeveloped open spaces	Still much of the open space in cities
Waterfronts	Increased awareness of waterfronts as urban open space
Found spaces	Informal open spaces of cities where social life takes place; include street corners, sidewalks, paths connecting buildings, etc.

Wooley (2005) studied the differentiation of urban open spaces, according to their distance and accessibility and by the social opportunities they provide, focusing on a tripartite division: 'Domestic spaces', 'Neighbourhood spaces' and 'Civic spaces' (Table 2.3). Although being more distant, civic urban open spaces provide the greatest amount of opportunities, above domestic and neighbourhood urban open spaces, for meeting a greater variety of people. In addition, more than domestic or neighbourhood open spaces, civic urban open spaces allow for the opportunity for anonymity for a longer period.

Combining major physical features with function is commonly one of the most used distinctions when characterizing public or urban open space. Some distinctions are indeed quite simple, as is example the UK's Urban Green Spaces Taskforce (2002, p. 43) characterization, where public space is solely divided

between types of green spaces and (hard) civic spaces, or the one by Gehl and Gemzoe (2001, p. 87) who, by focusing mainly on urban squares, offered only five types:

- Main city square: most important city square;
- Recreational square: meeting space;
- Promenade: combines traffic, walking and recreation;
- Traffic square: Interchange of traffic modes;
- Monumental square: Pause in the city fabric with particular symbolism.

Table 2.3 – Wooley's urban open space types (adapted from Wooley, 2005)

Types	Characteristics
Domestic	
Housing	Basic private space
Private gardens	Basic outdoor space, located in the context of the home
Community gardens	Semi-private space that is shared between a small number of dwellings.
Allotments	Extension of the private garden, with the attachment of a symbolic tie
Neighbourhood	
Parks	Considered the most democratic urban spaces as they are available to all
Playgrounds	Often located within a park.
Playing fields	Open spaces that most directly provide opportunities for active activities.
Sports grounds	May be situated within a park, although many schools also have them.
School playgrounds	Spaces that are used for a limited period of time.
Types	Characteristics
Streets	Places in the neighbourhood where people travel to other spaces and may be spaces for lingering with neighbours and friends to pass the time of day.
City farms	Often initiated by a community on a particular piece of land with the intention of providing opportunities for the immediate neighbourhood.
Incidental spaces	Natural green spaces that may be planned and designed or that may just happen by a road junction, bus stop or local shops.
Civic	
Commercial	Squares, plazas, water features and office grounds.
Health	Represent the areas around hospital and other health institutions grounds.
Education	Mainly related to university campuses.
Transport and recreational	Some are no longer used for their original purpose. Although it can be argued that to some extent all urban open spaces are recreational because both passive and active recreation can take place in all of them. Types included: woodlands, golf courses, cemeteries.
Courtyards and roof gardens	Associated with office and other private buildings.

Carr et al. (1992, p. 79) went further in his analysis and identified eleven functional categories of public space (Table 2.4), combining diverse physical, functional and operational aspects. Carmona (2010b), on the other hand, developed Kohn's (2004) definition, combining aspects of function, perception and ownership into a classification scheme of urban space. This definition moves then away from pure physical distinctions that characterized the first two present definitions. Twenty urban space types are identified in four overarching categories (Table 2.5), representing a gradual transition from clearly public to clearly private spaces, and divided into four main types: 'Positive' spaces; 'Negative' spaces; 'Ambiguous' spaces and 'Private' spaces.

Table 2.4 – Carr et al.'s typology of contemporary urban public spaces (Carr et al., 2002, pp.79-84)

Type	Characteristics
Public parks	
Public/central park	Publicly developed and managed open space as part of zoned open space; often larger than neighbourhood park
Downtown parks	Green parks with grass and trees located in downtown areas
Commons	Once pasture area for common use, now used for leisure activities
Neighbourhood park	Open space developed in residential environments; publicly developed and managed as part of the zone open space
Mini/vest-pocket park	Small urban park bounded by buildings
Squares and plazas	
Central square	Often part of historic development of city enter; may be formally planned or exist as a meeting place of streets; frequently publicly developed and managed
Corporate plaza	Developed as part of new office or commercial buildings; built and managed by building owners or managers; privately developed and funded
Memorial	Public place that memorializes people or events of importance
Markets	
Farmers' markets	Open space or streets used for farmers' or flea markets; often temporary
Streets	
Pedestrian sidewalks	Part of cities where people move on foot; most commonly along sidewalks and paths
Pedestrian mall	Street closed to auto traffic; pedestrian amenities provided
Transit mall	Development of improved transit access to downtown areas
Traffic restricted streets	Streets used as public open space; traffic and vehicle restriction
Town trails	Connect parts of cities through integrated urban trails
Playgrounds	
Playground	Play area located in neighbourhood; frequently includes play equipment
Schoolyard	Schoolyard as play area
Community open spaces	Neighbourhood spaces designed, developed, or managed by local residents on vacant land; not officially viewed as part of the open space system; often vulnerable to displacement or other uses
Greenways and parkways	
Interconnected recreational and natural areas	Natural areas and recreational spaces connected by pedestrian and bicycle paths
Atrium/indoor marketplace	Interior private space developed as indoor atrium space; counted by many cities as part of the open space system; privately developed and managed
Marketplace/downtown shopping centre	Interior, private shopping areas; may include bot interior and exterior spaces; sometimes called "Festival marketplaces"; privately developed and managed
Found/neighbourhood spaces	
Found spaces/everyday open spaces	Publicly accessible spaces; also can be vacant or undeveloped space located in neighbourhood
Waterfronts	
Waterfronts, harbours, beaches, river-fronts, piers, lakefronts	Open space along waterways in cities; increased public access to waterfront areas; development of waterfront parks

Besides these physical spaces, Crang (2000) added to the discussion a new and increasingly popular urban space type, the virtual space. Focused on the expansion of the World Wide Web, virtual space is the multiplication of spaces in the same place (Stone, 1991, in Crang, 2000). As it is apparently accessible to everyone with an internet connection, and becoming increasingly commonplace in contemporary society, it appears that this new online remit has the potential to intrude in broader characterizations of what is known today as "traditional public space".

Table 2.5 – Urban space types (Carmona, 2010b, p.169)

Space type	Distinguishing characteristics	Examples
'Positive' spaces		
Natural/ semi-natural urban space	Typically under state ownership	Rivers, seafronts, canals
Civic space	Traditional forms of urban space	Streets, squares, promenades
Public open space	Managed open space, typically green and available and open to all	Parks, gardens, urban forests, cemeteries
'Negative' spaces		
Movement space	Space dominated by movement needs	Main roads, railways, motorways
Service space	Space dominated by modern servicing requirement needs	Car parks, service yards
Left over space	Space left over after development	SLOAP, modernist open space
Undefined space	Undeveloped space, either abandoned or awaiting development	Redevelopment space, abandoned space
Ambiguous spaces		
Interchange space	Transport stops and interchanges	Metros, railway stations
Public 'private' space	Seemingly public external space, in fact privately owned and more or less controlled	Privately owned 'civic' space, business parks
Conspicuous spaces	Designed to make strangers feel conspicuous and, potentially, unwelcome	Cul-de-sacs, gated enclaves
Internalized 'public' space	Formally public space, now internalized and often privatized	Shopping malls, introspective mega structures
Retail space	Privately owned but publicly accessible exchange spaces	Shops, covered markets, petrol stations
Third place spaces	Semi-public meeting and social places, public and private	Cafes, restaurants, libraries, town halls
Private 'public 'space	Publicly owned, but functionally and user determined spaces	Institutional grounds, housing estates, university
Visible private space	Physically private, but visually public	Front gardens, gated squares
Interface spaces	Physically demarked but physically accessible interfaces	Street cafes, private pavement space
User selecting spaces	Spaces for selected groups (determined by age or activity)	Skate parks, playgrounds, sports fields, cemeteries
Private spaces		
Private open space	Physically private open space	Urban agricultural remnants
External private space	Physically private spaces, grounds and gardens	Gated streets, private gardens, sports clubs
Internal private space	Private or business space	Offices, houses, etc.

All these different interpretations, although important to understand the myriad of spaces forming the contemporary city, run into the risk of creating excessively long lists. As a result, some authors argue that it is impossible to catalogue spaces in a finite number of levels, and therefore the most efficient path consists in the agglomeration of a number of indicators, in order to constitute a growing scale of publicness (Akkar, 2005; Langstraat & Van Melik, 2013; Madanipour, 2003; Németh & Schmidt, 2011; Varna & Tiesdell, 2010). As a result, cities, and especially public space emerge as a comprehensively complex concept.

2.5. SUMMARY

The public/private distinction, included in society's mind-set for several centuries, has inspired a number of authors to develop their own interpretations, through questions of justice, equality, and society values. In fact, when public space often transcends its physical dimension, either by defining the 'public realm' of people and activities that make part of it, to the 'public sphere' of material and institutional common spaces, or the 'public domain' of common concerns and related discourse and representation, interesting assumptions can be inferred.

Although usually public spaces can be considered public in what concerns the people or the public as a whole, being open to them and used or shared by all members of the society or community, these can only be, at the very best, general criteria for defining what public space is. As it is by its very nature contested, ambiguous, and uncertain, public space is in a constant redefinition process regarding what it is, where it is, who may and how to use it.

Although the evolution that cities, economies and societies have experienced, with a particular focus on the twentieth century, has created strong asymmetries on urban areas, the benefits public space have to offer to the city remained nearly unchanged over time. From the creation and maintenance of a democratic community, powered by our free will and activities, passing through the economic, environmental and health benefits of green spaces, public space has a tremendous value to the city and its population. Although faced with new challenges, it needs to be flexible to contemporary dynamics.

As a result, does public space only appears when it is associated with a physical dimension? Is the question of space ownership affecting its status? Or does their popularity within society the only relevant aspect to decide its fate? The answer is not as straightforward as one might think. Therefore, what can define a space as public? Its publicness, definable by an almost endless number of physical and social features, is the starting point for this journey that will hopefully end in the rediscovery of the concept of public space. Even though public space in the contemporary city is and will probably continue to be charged both with meaning and controversy, further debates on public space will prove helpful in understanding how do these changes have affected public spaces and their synergies with society.

3
PUBLIC SPACE AND PUBLICNESS

3.1. INTRODUCTION

The struggle over the content of public space has been one of the elements of the overall container of urbanism. Ownership, control, rights, and duties are common terms in the discussion. As the quality of any place depends not only of its intrinsic features but also of the people who occupy it, changes in society, economy and overall thinking of the urban planning community had, as seen before, profound impacts over public space. Due to its importance on the overall operation of the city and its society, a strong debate has intensified, for some time now, over the growth and decline processes of public life and culture. With public space in central focus, all the essential elements to its operation have been thoroughly studied and interconnected in an attempt to understand its multifaceted dynamics.

Several studies, projects, and proposals have had major influences on the way public spaces present themselves to the urban population and, in particular, to its users. This chapter will focus on the main debates that evolved around urban public space, needed to fully understand the intrinsic dynamics and features regarding this major element of the urban scenario. This can help in the process of decoding the figure of public space in the contemporary city and, as a consequence, set the tracks to define and measure its publicness.

3.2. THE POTENTIAL OF PUBLIC SPACE

3.2.1. THE CREATION OF SUCCESSFUL SPACES

What makes a space successful is a pertinent question. As there is not a consensus about what features characterize a successful space (Németh & Schmidt, 2011)., when people are asked to describe a place they enjoy, words like “fun”, “clean”, “safe” and “lively” tend to be common answers. These intangible qualities represent the most important qualitative aspects of public spaces.

In their attempts to articulate what a proper strategy is made of, renowned academics and practitioners produced lists of principles to follow, ranging from broad desirable features (Francis, 1987; Jacobs & Appleyard, 1987; Loukaitou-Sideris, 1996; Lynch, 1984; Urban Task Force, 1999) to specific physical elements, optimal uses and functions (Alves, 2003; Bentley et al., 1985; Carmona et al., 2003; Carr et al., 1992; Clay, 1958; Lennard & Lennard, 1987; Tibbalds, 2001; Whyte, 1980). Several governments have also become aware of the importance of good quality public space, particularly the UK government who commissioned a series of practice-based publications in the field (CABE, 2002, 2004, 2007; CABE & OPDM, 2002). These can be understood as a part of a process of self-improvement of urban spaces, after recognizing its importance to the overall urban realm.

Jane Jacobs (1961) was one of the pioneers to explore urban quality from the premise that activity both produces and mirrors quality in the built environment. She identified four essential determinants that govern or set the conditions for activity: a combination of primary uses, intensity, and permeability of the urban form and a mixture of building types, ages, sizes, and conditions. Translating these to specific features of spaces, we can argue that Jacobs defends the need for successful public places to be located in areas characterized by different activity and building types, fuelling a large variety of users and, hopefully, uses. This premise can be identified in a number of subsequent studies (Carmona et al., 2003; Francis, 1987; Project for Public Spaces, 2000). In order to respond as to "what makes a good square good", Clay defended the need for three main aspects, all related to the space's activity levels. Spatial enclosure was viewed as the first main aspect, due to the feelings it generated among users. Secondly, social mix should be encouraged, for its benefits in bringing life and vibrancy. Finally, and somehow surprisingly, Clay defended the need for fountains, due to its ability to transform "dry spots into places of delight, of joy, wonder, surprise, and beauty" (Clay, 1958, p. 153).

Providing for user needs is indeed a prerequisite for the creation of successful public spaces, although often addressed poorly (Bentley et al., 1985; Carr et al., 1992; Francis, 2003; Loukaitou-Sideris, 1996; Whyte, 1980, 1988). Carr et al. (1992) call this the 'human dimension of public space' and argue that the three critical dimensions people form about public space, being those needs, rights and meanings, are often not addressed when creating public spaces. As a result, public spaces should be responsive, democratic, and meaningful. Responsive spaces are those that are designed and managed to serve the needs of their users. Democratic spaces, a definition tightly connected to personal freedom, are those that protect the rights of user groups as they are accessible to all, provide for freedom of action and also for temporary claim and ownership. Meaningful spaces are those that allow people to make strong connections between the place, their personal lives, and the larger world. They relate to their physical and social context. Through a thorough evaluation of the established connection between the space and its users, they concluded that a space should be 'responsive' to five needs: comfort, relaxation, passive, and active engagement and discovery.

Relaxation is distinguished from comfort by the level of release it describes, as it is a more developed state where body and mind are at ease. This escape, even if temporary, from the routines and demands of urban life is usually sought by urbanites. The concepts of passive and active engagement are used to categorize the distinct social bonds established between the city's inhabitants. While passive engagement is related to more indirect social activity, mainly regarding observation of the urban life, active engagement consists on an evolution of the latter concept, into more active social contact between the space's users. Discovery is the fifth attraction factor for people's presence in public spaces and represents the desire for stimulation and for new and pleasurable experiences. These five elements are interrelated as any one encounter with a place may satisfy more than one purpose, and can only be catered for if user freedom, one of the most basic rights of the public, is satisfied.

Still, besides the need for these elements, some authors make an interesting assumption when stating that the success of public spaces "also depends on social and political milieus supportive of an active public life" (Carr et al., 1992, pp. 26-27). This means the necessity to consider items such as the place's ability to foster democracy and social inclusiveness, opening an incredibly studied field on public space performance and role. For Kohn (2004) successful spaces must be universally accessible, and contribute to democratic inclusion by encouraging interaction between acquaintances and strangers. In fact, her concept of 'intersubjectivity' is just that, to allow interaction between users. The possibilities for interaction are also at the foundation of Francis (1987, p. 99) dimensions for the development of successful urban open spaces. In order for spaces to be loved by those who use it and live or work nearby, spaces should:

- Be used by a variety of users including children, teens, and the elderly;
- Allow for a variety of activities;
- Be comfortable and people should feel safe and secure when using it;
- Afford opportunities for user involvement, control, and manipulation;
- Be publicly accessible;
- Be democratic;
- Provide opportunities for environmental learning, discovery, delight and challenge;
- Be ecologically healthy;
- Contribute with economic benefits to surrounding community;
- Be evaluated, redesigned, and improved over time;

Later, Francis (1999) argued that, through design, management and public intent, public spaces should be designed to be deliberately open, inclusive and diverse, offering the concept of 'energetic public spaces'. By introducing 'proactiveness' and intent in the effort of public space production, they could be intentionally created as 'mixed-life places'. A strong relationship between space and users is the centre of Henry Shaftoe's concept of 'convival spaces', spaces where "citizens can gather, linger, or wander through" (2008, p. 4).

Kevin Lynch (1984), although extending its analysis to the overall cityscape, referred five main dimensions of performance: vitality, sense, fit, access, and control. For him, a vital city is one that successfully fulfils the needs of its inhabitants within a safe environment. A sensible city is organized so that its residents can perceive and understand the city's form and functions, a feature usually called legibility. An accessible city allows people of all ages and backgrounds access to activities, resources, services, and information in order to fulfil their needs. Finally, a city with control is arranged so that citizens have a say in the management of the spaces where they work and reside. This last dimension is extremely relevant to this study as Lynch defends the need for great citizen integration in the operation of urban spaces. After all, they are their users and the ones who benefit from their improved conditions. Beyond these five basic dimensions, he proposes two additional meta-criteria, efficiency, and justice. An efficient city is one that maintains the cost, in terms of other valued things, of creating and maintaining the settlement. A just city is one where environmental benefits and costs are distributed equally among its residents. Although a clear example of an abstract approach to present a space's ideal features, these elements present a more integrated approach, where three essential of the several elements of the urban framework are at stake, namely the need for properly designed spaces, fostering activity and promoting a positive opinion from their users.

Jacobs and Appleyard (1987), in a similar note, suggested seven essential goals to the creation of a good urban environment: liveability; identity and control; access to opportunities, imagination and joy; authenticity and meaning; community and public life; urban self-reliance; and the creation of an environment for all. The first goal is mostly related to comfort and absence of common urban elements such as overcrowding, noise, air pollution, and trash. The second goal promotes the encouragement of a sense of identity and care for the urban environment. The goal that follows reinforces the idea of the city as a place of experience, excitement, and entertainment. Although being more related to the overall city experience, it is acceptable to say that the urban public spaces should provide the first step in achieving this goal. By 'authenticity and meaning', it is suggested the idea of the city as a discoverable space and where its basic layout can be easily grasped, in order to understand its functions and opportunities. Community and public life encompass the notions of publicity, justice, and democracy and should be promoted essentially through the city's public spaces. Urban self-reliance, by being more related to issues of sustainability, mainly energy and water resources, can probably be the one with less

relevance to these types of spaces. Nevertheless, it is still a case where public space can lead the way to other urban elements. The last goal defends the need for equality, mainly in terms of access and control. In these seven goals, the issues of democracy are fairly evident. Most of the elements in this approach had already been defended by Bentley et al. (1985) in their work regarding the establishment of good urban design.

At a time when the negative outcomes of modernist urban planning came to the overall mind set, Lennard and Lennard's (1987) research resulted in the definition of ten design principles in order to adapt it to a set of desirable social functions and experiences:

1. Urban spaces should be free from vehicular traffic. Instead, a pedestrian network should be created in so far as it facilitates access to public spaces, and hence the participation of all segments of society, such as the elderly, handicapped and children.
2. Urban spaces should be located at the heart of the city or neighbourhood as they fulfil both functional and symbolic roles but they must also be multifunctional, accommodating as many uses and activities as possible.
3. The size of the urban space and the surrounding buildings should be scaled down to human proportions and human use to facilitate social interaction.
4. Visual enclosure and the threshold experience foster a sense of belonging.
5. Public spaces should have natural elements, that is, plants, flowers and trees, as they increase sensual experiences and can be used as places to linger or shelter.
6. The intricacy and variety of surrounding buildings with unpredictable changes of view stimulate curiosity and interest in the setting and encourage exploration.
7. Intimate and personal territory adjacent to significant and historical buildings gives structure to meaningful experience and crystallizes memories.
8. Architectural backdrops, changes of floor levels, floor textures, bollards, and focal points such as fountains, orient people in space since different parts of the public space will have defined personalities and will therefore facilitate a differentiated use of space.
9. Public spaces should also have appropriately designed seating, ledges, walls, planters, rails, and steps for people of every age and ability.
10. The orientation and dimensions of seating arrangements should permit eye contact, facial and voice recognition to facilitate interpersonal contact and communication amongst users.

For Montgomery (1998, p. 59), successful urban places must combine quality in three dimensions: activity, image and form. Nevertheless, a successful public realm is the 'transaction base', which should be "as complex as possible", giving therefore a higher relevance to first dimension. In a way, this study carries on the premise of Jane Jacobs, where activity levels are the most important element to promote good quality urban environments. The Project for Public Spaces, a non-profit organization that carries on the work of William H. Whyte, its founder, developed a systematic process to program and design space, identifying four key qualities (2000): access and linkages; uses and activities; comfort and image; and sociability. This means that, in a successful public realm, its public spaces are accessible, people are engaged in activities in a comfortable and visually pleasing setting, with a strong social ethos, where people meet each other and take others when they come to visit.

Gehl (2001) divided the issues of designing and defining the quality of public spaces into three main categories: protection, comfort, and enjoyment. Under protection, Gehl addresses three key issues, namely the protection against traffic and accidents, the protection against crime and violence, or the feeling of safety, and, finally, the protection against unpleasant sensory experiences such as wind, rain, cold, intense heat, pollution, dust, glare and noise. Regarding comfort, six issues are reported regarding

possibilities for different actions, specifically the possibilities for walking, for standing, and supports for staying, including but are by no means limited to benches or posts against which to lean, for sitting, to see, for hearing/talking, and for play and other activities. Finally, he places three items under the category of enjoyment: scale, the existence of possibilities for enjoying positive aspects of the climate, and the aesthetic quality and positive sense experiences. For Gehl, physical quality is manifest that the way spaces relate to its users, responding to their needs, and allowing the formation of positive opinions, is essential to create quality public spaces, inviting people in and making them come over later. As a result, when spaces do not provide conditions for the establishment of social activities, i.e. when they work solely as movement spaces, their quality is considered as deficient. For Shaftoe (2008), the opportunities a space provides for the experience of joy and delight can be broadly achieved in three ways: through the provision of good hard and soft landscaping, public art and entertainment. Here, entertainment can be seen as a link between the establishment of 'positive' connections between citizens and urban space through activity.

The question of sensory experiences is also seen as essential to Stevens (2007) and Sircus (2007, p. 128) who defends that "successful places can be either rich on detail and authentic, or boldly abstracted and theatrical, providing they have clear visual communication that is easily understood and is congruent with the story. The uninteresting, banal places do not communicate and in that respect are simply pastiches". With this, these authors enter into the group who defend the relevance of good urban form and design as a means to achieve a successful public space. Camillo Sitte had already addressed similar concerns with the publication of 'The Art of Building Cities' in 1889, which derived from studies of traditional medieval squares. In this work, spatial enclosure and irregularity, achievable by a continuous frame of buildings, although marked by the disruption of its symmetry, around a central open space, and irregularity, characterized by the disruption of the symmetry of these same surrounding buildings, were the main elements required to the establishment of a successful space. Physical design was therefore a vehicle to how a particular space made us feel.

Although the physical design is one of the most important aspects for the success of a space, the quality of urban spaces passes ultimately through its freedom of use, namely in terms of access, action, fruition, and transformation/change (Alves, 2003). As public spaces usually serve different purposes, different physical features must be sought for each. Also, the success of a public space depends not only on particularities of the physical design and the project's brief but also of the specific process of space development (Alves, 2003; Brandão, 2002), in aspects such as a proper evaluation of objectives and guidelines, selection of the proper development agents, followed by the development of a balanced economic evaluation, capable of mobilizing the community and involving it in the main steps of the decision-making process.

This discussion can be summarized by presenting three main distinct elements that, according to this section, define what makes a successful urban space, being they high levels of activity, a strong connection between the space and its users, and a 'good' image and form. Combining these features, a comprehensive approach to urban public spaces is therefore created, with the purpose of creating better quality spaces and a healthier urban environment, while improving people's quality of life and social conditions, and fostering a quality called 'placemaking'. Placemaking is also an outcome of sense of place, which will be addressed further on. Table 3.1 and Figure 3.1 summarize these ideas.

Still, for Montgomery (1998) it is relatively straightforward to think of a successful place, go there and experience it as such. On the other hand, it is much more difficult to assess to factors responsible for its success, and whether similar success can be generated elsewhere by replicating the right conditions.

Table 3.1 – Successful public space desirable features

Desirable features	Authors
User diversity	Alves, 2003 Clay, 1958 Francis, 1987 Project for Public Spaces, 2000
Use diversity	Montgomery, 1998 Carmona et al., 2003 Jacobs, 1961 Project for Public Spaces, 2000 Shaftoe, 2008
Surrounded by diverse uses	Bentley et al., 1985 Jacobs, 1961 Lennard and Lennard, 1987
Proper accessibility	Alves, 2003 Francis, 1987 Project for Public Spaces, 2000 Kohn, 2004
Free from vehicular traffic	Lennard and Lennard, 1987 Project for Public Spaces, 2000 Gehl 2001
Provide for user needs	Alves, 2003 Bentley et al., 1985 Jacobs and Appleyard, 1987 Francis, 1987 Carr et al., 1992 Montgomery, 1998 Gehl, 2001 Kohn, 2004 Sircus, 2007 Shaftoe, 2008
Adequate spatial enclosure & human scale	Clay, 1958 Lennard and Lennard, 1987 Gehl, 2001
Visual diversity	Bentley et al., 1985 Lennard and Lennard, 1987 Shaftoe, 2008
Ample seating provision	Alves, 2003 Carr et al., 1992 Francis, 1987 Lennard and Lennard, 1987 Project for Public Spaces, 2000 Shaftoe, 2008 Németh, 2009 Whyte, 1980, 1988
Proper physical upkeep	Clay, 1958 Jacobs and Appleyard, 1987 Project for Public Spaces, 2000
Improved over time	Francis, 1987 Lynch, 1984
Protection from physical elements	Alves, 2003 Carmona et al., 2003 Gehl, 2004 Whyte, 1980, 1988

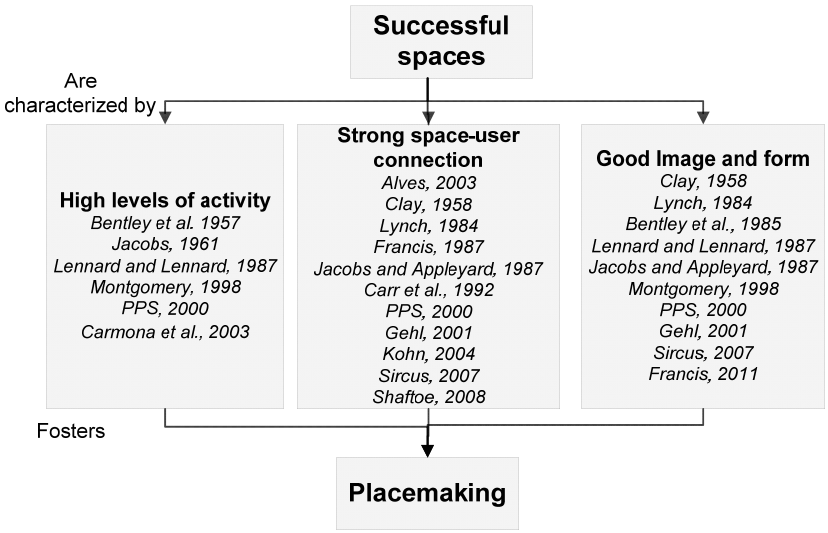


Figure 3.1 – Successful public spaces debate

3.2.2. PUBLIC SPACE IN URBAN REGENERATION

Much has been said regarding the importance of urban regeneration, particularly in European cities marked by the physical, social, and economic degradation of its old historic cores (Akkar, 2005; Balsas, 2004; Biddulph, 2011; Gospodini, 2002; Jeffrey & Pounder, 2000; Miles, 2005; Roberts & Sykes, 2000; Urban Task Force, 1999; Van Mélik & Lawton, 2011). Given public space's strong intrinsic value for the city and its residents, its integration into broader urban regeneration initiatives seemed like a natural step towards an overall urban revamp.

In the contemporary polycentric urban structure, city centres are usually in competition with other activity centres. Globalization and growing commitments about urban prosperity turned much of the focus of urban governance "no longer to the provision of services to city residents, but with the prosperity of the city and its ability to attract jobs and investment" (Hubbard, 1996, p. 1441). Cities engaged in vigorous competition to become designated as venues for international cultural and sporting events, focused on heritage and nostalgia to attract the tourist (Hughes, 1999), with public spaces and urban design being one of the main vehicles (Madanipour, 2003, 2006).

As urban regeneration should be aimed at the simultaneous adaptation of the physical fabric, social structures, economic base and environmental condition of an urban area (Roberts & Sykes, 2000), cities in economic decline have often embarked on the revitalization of its historic centres and waterfronts as a method to restructure its local economy (Gospodini, 2002; Hubbard, 1995; Marshall, 2000; McInroy, 2000). The hosting of major international events, such as the Olympic Games and international exhibitions is another method of adding projects with a strong and permanent effect on the city and its life, although more difficult to implement due to the higher costs associated with it, with the most clear examples being Barcelona, for its public spaces and urban design and management of the 1992 Olympic Games, and Bilbao for the Guggenheim Museum redevelopment. In the US, some of the most known examples come from Baltimore's Harborplace redevelopment and New York City's Battery Park.

Harvey (1989) coined the proliferation of these city marketing strategies as a shift from managerialism to entrepreneurialism. In the 1990's there was a discernible shift of emphasis towards 'time shifting', using festive imagery to aestheticize temporal demarcations such as the night, the end-of-year and the millennium (Hughes, 1999). In par with the creation of a new and improved public space, in the majority of these design-led urban regenerations, flagship buildings, high quality residential and commercial

developments, squares, fountains, boulevards, street furniture, lighting and landscaping are often applied in conjunction with strong place promotion and urban marketing strategies. The support of private businesses, such as shops, restaurants, and cafés, together with the stimulation of the evening economy, and temporary events, such as music festivals, art exhibitions, and sporting events bring additional value to these spaces and to the overall regeneration programmes, attracting residents and visitors (Bell & Jayne, 2003; Hannigan, 1998; Harvey, 1989; Heath, 1997). Public transport and infrastructure improvements, combined with the reutilization of under-used buildings complete the lot of improvements. As a result, "the entrepreneurial city is littered with flagship projects, iconic architecture, reimaging and rebranding initiatives, the privatization of public space and evidence of gentrification" (Biddulph, 2011, p. 97). Evans (2003) refers to 'hard branding' written into the form of the city through a combination of tactics like flagship developments, redeveloped public spaces, festivals and events.

In the United States, post-war urban renewal passed through the destruction of historic inner-city neighbourhoods for the sake of transportation improvements, which were for much time the most visible forms of urban development and progress, considerably criticized by Jane Jacobs (1961) and other influential authors of the era. The urban renewal projects of the 1960's and 1970's, moved by a transition from an industrial to a post-industrial knowledge-based economy, were largely financed by federal grants, led by city planning departments, and characterized by a broad-based development strategy involving the widespread removal of old buildings, use of traffic thoroughfares, and erection of large office towers (Mitchell, 2001). These were often based on a "field of dreams approach, suggesting that if you build it, they will come" (Gross, 2005, p. 174). The private sector was seen early on as an important ally, with the development of the first corporate plazas and semi-public spaces, and later with Business Improvement Districts. The withdrawal from the public sector of the main (financial) costs of construction and development increased the pace of urban renewal, especially in the large urban centres. Although privatization schemes defined the fate of some redevelopment projects, BID's tended to be left apart of this initial stage, as "they deal with the existing built environment rather than being involved in its design, although in practice they often work as brokers in redevelopment deals" (Ward, 2006, p. 59).

Across the Atlantic, in the UK, a wide variety of strategies attempted to target the decline of city centres. Increased concerns about public safety and the overall attractiveness of privately owned sites, such as out-of-town retail centres were the foundation for commonly used strategies such as the extension of existing CCTV systems to the funding of aggressive city marketing campaigns (Bannister et al., 2006). The creation of Urban Development Corporations in the 1980's, the 1999's Urban Task Force Report and the Government's Urban White Paper of 2000 were important to the first attempts on the reinvention of city centres, based on services, retail, and leisure. In this process, the role of public spaces was reconsidered after the success achieved in Barcelona (Figure 3.2). The UTF report showed a strong concern for the value of 'traditional streets' as 'outdoor living rooms', addressing issues such as crime, hooliganism, litter, graffiti, noise in measures such as improvements in pedestrian accessibility, traffic reduction, public transport improvement, improvement of urban green space and overall urban environment (Urban Task Force, 1999).

Figure 3.2 – Barcelona public spaces

Overall, changes in property markets towards a greater involvement of private investors and large investment corporations, the evolution of the urban economy towards a greater increase on consumption trends and an overall increase in the projects' sizes raised the awareness about the creation of masterplans towards a more focused development of urban areas (Bell, 2005). The success of high-profile projects was also an important trigger to the proliferation of this trend. The value of a high quality public realm came as a natural outcome of these synergies. In a number of different ways, however, the new design and management have underprivileged the public space's civic functions, thereby frustrating the ideal 'public' qualities of the space (Akkar, 2005). Some authors, such as Van Mélik and Lawton (2011), argue that public space in the majority of urban renewal projects is mostly seen in a supporting role and therefore without much importance to the overall quality of the project. The problem with this infrastructure planning style is that it tends to focus the debate around the work of technicians and experts, and are therefore beyond the wider realm of public debate (Marshall, 2000). Labelling the city through cultural flagships and festivals created a form of "karaoke architecture where it is not important how well you can sing, but that you do it with verve and gusto" (Evans, 2003, p. 417). Also, concentration on spectacle and image rather than on the substance of economic and social problems can also prove deleterious in the long-run, even though political benefits are easily obtained (Harvey, 1989). Although physical regeneration can be understood as an important, but not a sufficient condition for a successful urban regeneration (Jeffrey & Pounder, 2000), as the rate of socio-economic change is faster than the one of physical improvement, requiring close interaction between social, physical and economical aspects.

As a result, physical regeneration has been moving beyond sole flagship buildings and city-centre public realm improvement works. Public art projects and concern for design quality in the everyday environment show a growing concern towards quality of life (Evans, 2005). For this, culture-led regeneration was seen as a valid alternative, mixing physical, economic, and social impacts in a single strategy. The European Capital of Culture event was an important starting point for cities to implement significant urban regeneration operations, capitalized on cultural events (Balsas, 2004; Hughes, 1999; Richards, 2000), being conceived at a time when the city was again perceived as a place of culture, style and artistic excellence and when industrial production had declined both economically and symbolically (Evans, 2003). Culture-led urban regeneration, although often positive in revamping the image of the city and creating additional value, are, according to Miles (2005), not always positive, due to possible conflicts with identity of place. The relationship between individuals and their social and physical relationships must be put ahead of the nature of the space itself. In fact, Balsas (2004) criticized this same lack of institutional capacity at the expense of widespread infrastructure building in the organization of the Porto's 2001 European Capital of Culture event.

In relatively disadvantaged smaller European cities, urban design may indeed become a determinant factor for its future, producing a prestigious and symbolic urban landscape and making them stand up from the lot (Gospodini, 2002). The challenge for local authorities, planners, architects, and other regeneration initiatives is then the consideration of society's everyday needs. The creation of unpretentious public spaces, which can effectively guide the development of these image-led regeneration strategies, can only happen if society's needs and interests are balanced with the true essence of a public space, i.e. its publicness.

3.3. THE PUBLICNESS DEBATE

3.3.1. THE CRISIS OF PUBLICNESS

Marshall Berman (1983) identified the politicization of the streets as a key component of the 'experience of modernity', as the public domain became a key subject in regulation and control. Berman shows this process through Haussmann's inflexible 'modernization' of the streets of Paris, Le Corbusier's vision of the streets as a 'machine of traffic' and Robert Moses' plans for metropolitan redevelopment in New York (ibid.). This urban experience has always been defined by planning. Understood as the bridge between knowledge and action in the public domain, it "can be applied to two kinds of action concerned either with societal guidance or social transformation" (Friedmann, 1987, p. 298). In fact, planning was not exclusively a function of the central state and, in fact, planning in the public domain could be originated anywhere, including emerging from civil society, responding to its most pressing needs. Although this was common in the past, throughout the 20th and into the 21st century, planning has often evolved from central guidance, being tied to successive reforms and increasingly in support of capitalist development. This strategy, which included social and physical planning, attempted to ameliorate, through social welfare programs, urban design and land controls the worst effects of excessive and unregulated economic growth. Regulation, the main objective of planning, provided prompt "changes to the symbolic and real possibility of places even when the places themselves remain physically unaltered" (Miller, 2007, p. 23). In fact, regulations can be applied and retracted in only days or weeks, whereas physical changes take place and lead to consequences that persist over much longer periods. Besides time, one has to take into account that redesigning a space is also more costly than setting out new regulations, making an even greater difference when dealing with large areas. Loukaitou-Sideris and Banerjee (1998), on the other hand, seem to disagree as they criticize the difficulties in legislating civility in public spaces. This situation depends, obviously, on the society's main values and the degree of bureaucracy associated with the planning process, which is a result of a particular country or region's planning culture.

As management approaches differed from space to space and from time to time, the publicness of urban areas, and in particular of its public spaces, has been constantly formulated and reformulated (Németh, 2009). This process sees itself in Zukin's (2009) 'crisis of authenticity', "seen and felt as an undesirable change in urban experience, representing a different regulation of both spaces and people, creating projects and dependencies on a larger scale, eliminating the means by which poor people and ethnic minorities produce their lives, and reducing the social and aesthetic diversity that has been a historical element of city life" (p.545). Hence, strong positions have been drawn both for and against an increase in publicness.

Scholars such as Lofland (1989) and Sennett (1992) argue that urban life has become more specialised, leading to a largely privatized society, obviously with undesirable effects over public spaces. Changes in public spaces will not, therefore, be enough to recover society of its current condition. Sorkin (1992) went even further by lamenting, almost in a nostalgic tone, the death of the city and the end of public

space. The structure of the society, marked by severe economic and social inequalities, is often the target of measures guided by economic prosperity and investment, oriented to urban space. The new attractive urban spaces that result from it end up driving responses that clear or drive off undesirable users, reducing the possibilities for democratic action and setting the path for subsequent social problems (Atkinson, 2003; Mitchell, 1995). Jackson (1998) backs up this theory by referring the exclusionary processes affecting various social groups to defend the proposition that most public spaces were always neglected and hence evoke feelings of fear. Privatization and processes of physical and social rundown are the most visible consequences of this situation, and where special concerns have to be addressed.

Still, the constant redefinition of the concept of 'the public' and the people for whom public space is supposed to be open and accessible, leads to the creation of diverging arguments. According to Neal (2010b), most of the arguments regarding the loss of public space revolve, wrongly, around claims that its openness and accessibility are in decline. For Lees (1994, apud Carmona, 2010a), much of the new contemporary public spaces still retain important aspects of urban life, even if wider civic functions are missing. Due to its potential for the exchange of goods, information, and ideas "the design, accessibility, and the quality of such urban space can be ought to be criticized, but its existence must be recognized" (ibid., pp. 448-449). Even if suffering from the negative effects of privatization, public spaces remain as "the visual emblem of the public culture, as well as the sites of gathering where some aspects of this culture are formed and performed" (Amin, 2006, p. 1012). If organized and managed properly, public space "offers the potential for social communion by allowing us to lift our gaze from the daily grind, and as a result, increase our disposition towards the other" (Amin, 2008, p. 6). Therefore, some authors argue that the reported decline in public space has gone too far (Hajer and Reijndorp, 2001, in Carmona, 2010b; Loukaitou-Sideris & Banerjee, 1998), and show signs of hope regarding the future of public space. It appears then that the methods through which these spaces have been managed have, most likely, not been the most adequate, meaning that privatization, greater community involvement, and other emerging forms of management must be taken into consideration in order to explore its 'dormant' potential. Beyond managerial changes, proper urban design has indeed the potential to reduce potential conflicts and work towards a more cohesive urbanism (Madanipour, 1999).

Earlier, and on the most favourable end of the scale, some commentators (Brill, 1989; Krieger, 1995, in Loukaitou-Sideris & Banerjee, 1998, p. 182) argued that the public realm's apparent decline is based on a false notion and that, in reality, it has never been "as diverse, dense, classless, or democratic as is now imagined". Carr et al. (1992) suggested that as cultures and societies evolve, new forms of public space will be expected. These new types of spaces, according to Banerjee (2001), seek to create "a public life of flânerie" and consumption, in order to provide enjoyment and an emotional response (Allen, 2006). Gehl and Gemzoe (2001), for instance, noticed an improvement and return to traditional forms of space with the purpose of regaining public life and giving back the city to its citizens. In fact, recent phenomena of space appropriation by citizens such as farmer's markets, antiques fairs, open-air cinema displays, show that public places have apprehended new and interesting dynamics (Figure 3.3). Worpole and Knox (2007, p. 4) later defended this interpretation by saying that as opposed to conventional assumptions, public space is not in decline but is instead expanding. This means that, despite the growing tendencies towards privatization, opportunities for association and exchange have increased. Symbolic and material qualities of contemporary public spaces are "remindful of an ideal of space that has never quite been" (Allen, 2006, p. 446). Still, it is important to maintain appropriate levels of security and safety in order to maintain their vitality. With this in mind, it is then imperative to redefine the focus of the debates to reflect how people actually use spaces, and that the opportunities they provide for shared use and activity are more important than just its ownership and appearance.

Figure 3.3 – Antiques fair at a square in Porto, Portugal

According to Carmona (2010a), the debates around the evolution of public space can be organized in two sets of interpretations. On one side, there are the critics who focus on the concept of over-management. Privatization and over-securitization (Atkinson, 2003; Fyfe & Bannister, 1998; Loukaitou-Sideris & Banerjee, 1998; Low & Smith, 2006; Madanipour, 2003) often lead to concerns regarding excessive control. Another consequence of this emphasis on space management is its commodification (Kohn, 2004), leading to widespread critiques over the creation of idealistic spaces (Sircus, 2007; Sorkin, 1992; Van Mélik et al., 2009; Zukin, 1995), characterized by an overall placelessness and a loss of authenticity (Carmona et al., 2003; Montgomery, 1998). As the political debate and the overall basic aspects of democracy are the first elements to disappear in these new spaces, (Loukaitou-Sideris & Banerjee, 1998), in a steady decrease of the public sphere, the corporate city is epitome of the end of traditional public space (Sorkin, 1992). For Ellin (1996), privatization is both a cause and a consequence of the decline of space.

On the other hand, another group of critics have been focusing on the phenomena of under-management, and particularly of its visible effects in terms of physical and social rundown. The growth of the private realm (Ellin, 1996; Sennett, 1992), the development of new ambiguous 'third places' (Oldenburg, 1999), and the proliferation of virtual space (Mitchell, 1996) were all triggers to new policy and development processes, culminating in processes of social exclusion, particularly over ethnic minorities and women (Francis, 1989; Lofland, 1989; Oc & Tiesdell, 1998; Pain, 2001; Whyte, 1980). These 'cracks in the city' (Loukaitou-Sideris & Banerjee, 1998) are not, however, a recent phenomenon. In 1889, at the peak of new public space creation on the cities of the Industrial Revolution, Camillo Sitte (in Carmona, 2010a) discussed the dropping functionality of new public space and regretted an apparent loss of public life. Jane Jacobs (1961) had also criticized this process in which new design theories originated uncivil behaviour and consequently aggravated the concerns about crime, defending therefore increased surveillance and territorial definition.

'Fragmented space', 'invaded space', 'lost space', and 'slack space' (Carmona et al., 2003; Gehl & Gemzoe, 2001; Trancik, 1986; Worpole & Knox, 2007) are all synonyms to express the decline in the way we care about the urban environment (Carmona & De Magalhães, 2006). Good design is therefore one solution (Tibbalds, 2001), as public life exists in private spaces as well, regardless of its ownership (Banerjee, 2001), and hence these 'liminal spaces' still retain the potential of bringing people together (Sennett, 1992; Zukin, 1991). Overall, this critique on under-management appears overtly more optimistic than the first set of critiques.

Although the under management and over management may be two sides of the same coin (Carmona 2010a), this first insight shows that, even at the core of its interpretation, public space generates a set of diverging and interesting opinions and arguments, which are no more than a mere result of its complex nature. The debates, initially divided in two different sets regarding the crisis of publicness or the management 'dilemma', resulted in an analysis over four distinct aspects of public space. Physical and social rundown is one of the most discussed themes as a consequence of the growing abandonment of public space. Privatization was seen as a way to revitalize and optimize this underused urban resource and, in a way, is related to another branch of discussion regarding the space's safety and security. Access and control, the last of the four main debate themes deviated from the security and privatization ones by reflecting the social concerns associated with these on-going changes. As 'form follows fear' (Ellin, 1996) in the postmodern city, the widely controversial rise of the 'fortress city'(Davis, 1992) illustrate that issues of security, access and control are now prominent themes in contemporary planning and urban design. Therefore, it is expected to see the debate forming around these concepts. The next scheme (Figure 3.4) shows us, summarily, the different branches where the debate regarding public space is divided, as well as the inherent connections.

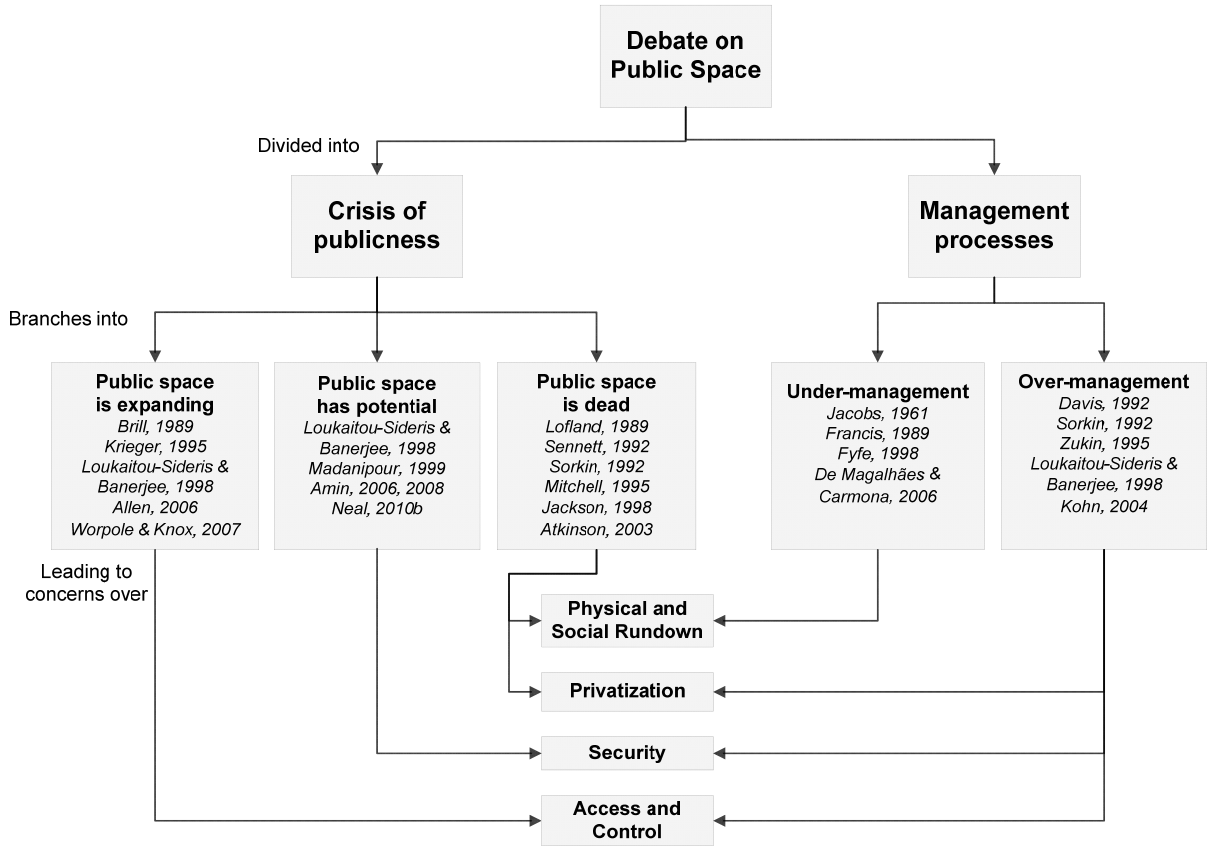


Figure 3.4 – Initial division of the public space debate

3.3.2. PHYSICAL AND SOCIAL RUNDOWN

The physical decline of public space and subsequent social rundown of the public realm form the basis for the under-management theories (Carmona, 2010a) and new definitions, regarding certain public spaces, were created to explain this phenomenon. Trancik (1986, pp. 3-4) opened the discussion with the term 'lost space', spaces "in the need of redesign, anti-spaces, making no positive contribution to the surrounds or users (...) ill-defined, without measurable boundaries, and that fail to connect elements in a coherent way". The Modern Movement, with its emphasis on the car and a functional separation of uses, combined with a lack of will from the contemporary institutions, is, in this author's opinion, the major force behind this phenomenon. Lefebvre (1991) and later Carmona et al. (2003) showed this concern on their focus over the fragmentation of urban space, where fast vehicular thoroughfares turned the urban experience into a simple movement process between departure and arrival points. This ultimately left the city as an "archipelago of enclaves" (Hajer and Reijndorp, 2001, in Carmona, 2010a), characterized by physical rundown. Francis Tibbalds (2001, p. 1) argued for this matter that this neglected space is too often "littered, piled with rotting rubbish, covered in graffiti, polluted, congested and choked by traffic, full of mediocre and ugly poorly maintained buildings, unsafe, populated at night by homeless people living in cardboard boxes, doorways and subways and during the day by many of the same people begging in the streets".

Loukaitou-Sideris (1996, p. 91), with the same goal in mind, talks about 'Cracks in the City', defined as the "in-between spaces, residual, under-utilized and often deteriorating" and where "abandonment and deterioration have filled vacant spaces with trash and human waste". Generally referred to as SLOAP, 'spaces left over after planning', these in-between no-man's land places were called by Hajer and Reijndorp's (2001, p.128, quoted in Carmona, 2010a) 'liminal spaces' and represent nothing more than "border crossings, places where the different worlds of the inhabitants of the urban field touch each other" (Figure 3.5).

Figure 3.5 – Example of a 'lost space' in Porto, Portugal

Although a wide variety of interested authors demonstrate the importance of this debate to the understanding of the overall 'picture', given the particularities of the concept of public space, Banerjee (2001) defends a focus on the broader concept of 'public life', enveloping the study of the socio-cultural realm of people and activities, allowing to circumvent the incomplete physical dimension. In fact, the evolution of public space is not only oriented towards physical fragmentation. All changes regarding public space have always taken its toll on its users, the city's inhabitants, and in the modern society the citizen's roles in the urban space changed dramatically. Secularism and capitalism, fuelling a growth in

the private relations of individuals, families and intimate friends, were the cause, in Sennett's (1992, pp. 5-15) understanding, to the decline in public life. The retreat to domestic life has therefore been replacing the venues of public life, the streets, and squares, by the household living room, causing 'the fall of the public man'. As the broad concept of community is a necessary condition for the maintenance of urban life (Hill & McCarthy, 1990), Sennett (1992) and Zukin (1991) use the term 'dead public spaces' to refer to the contemporary city space's lack of capacity to host social interaction. Nevertheless, Sennett (1992, p. 15) defends a certain amount of distance between society members in order to maintain its overall sociability. For him, "people are more sociable, the more they have some tangible barriers between them". Public space therefore has the single purpose of bringing people together, until a certain threshold of proximity is reached. "When everyone has each other under surveillance, sociability decreases, silence becomes the only form of protection" (ibid.). For this, Worpole and Knox (2007) use the term 'slack spaces', referring to the need for its regulation. Imrie and Street (2009) stated that although we are living in an over-regulated world, this same notion of regulation is not easy to define nor desirable to identify with.

Beyond the retreat to a growing domestic life, scholars such as Ellin (1996) argue that the spread of new technologies and the creation of new private venues for social exchange have been the reason behind this decline. These 'third spaces', a concept originally introduced by Oldenburg (1999) to refer to the need of new social realms in order to complete the gap created by the isolated domestic life and the solitary work life, consist of the new grounds for this 'informal' public life. Although seemingly more scattered than in the past, it is in fact highly focused in a given genre of space such as cafés, bookstores, bars, hair salons, etc., i.e., based on commercial activity. Banerjee (2001, pp. 19-20) also defends this 'third' life, suggesting that designers should not focus exclusively on pure physical space but also in broader notions of public life. The development of information technologies and virtual space extended even further the number of venues for social exchange, deserving some criticism by some authors (Crang, 2000; Ellin, 1996), while others argued that the nature of cities will be, although not in a negative way, irremediably changed by the evolution of a 'virtual space' based on new information technologies as "computer networks become as fundamental to urban life as street systems" (Mitchell & Staeheli, 2006, p. 107). As humans are considered to be social animals, it is likely that the 'informatization' of society will even increase the propensity for real-life face-to-face social interaction. The 'electropolis', a term coined by Crang (2000) to refer to the new city based on electronic and virtual spaces, is not an alternate realm but a consequence of the different forms of spaces that shape the urban set, being physical, social and political the most relevant. In fact, "the public space of the virtual city is thus very much the electronic agora" (ibid.).

For Loukaitou-Sideris (1996, p. 100), "the fragmentation of the public realm has been accompanied by fear, suspicion, tension and conflict between different social groups". Social changes affecting urban public spaces tend to affect certain groups of the society in a more severe way. Children, the elderly, and the disabled are some of the groups at stake. Also, most of the built environment specialists and professionals have little awareness of the needs of those with disabilities (Imrie & Hall, 2001, p. 10), and for Carmona et al. (2003, p. 43) the understanding of the true difficulties and the imposition of inclusive design are essential elements in the process. As well as physical barriers, psychological barriers such as the fear of crime are also essential to take into consideration in the debate regarding public space. This will be addressed ahead in this chapter.

Another manifestation of this urban fragmentation is also visible, although in a less comprehensive way, in the ethnic neighbourhoods such as Chinatowns, Little Italies, or the African 'enclaves' of the French city suburbs. Regardless being designed or spontaneously created in order to ease the integration of the different individuals, the truth is that in the overall urban landscape this integration is deficient, as it

does not configure a relationship base with the 'different' citizens. The city as a whole provides a framework for social differentiation and segregation on the basis of access to resources, as for example the rich can choose where they wish to go and can create areas with distinctive cultural, social and political characters (Madanipour, 2004). This possibility, however, does not exist for the lower classes of the society, who need to live together in the marginal spaces that are made available to it. Gentrification (Jacobs, 1961; Lees, 1998; Smith, 1996) is another consequence, this time blaming the middle and high classes. The result, in both cases, is a privately orchestrated extension of private spaces in the lives of urban residents at the expense of its public counterparts.

It is not by chance that current proposals for public realm strategies and neighbourhood wardens are typically presented as empowering investments in deprived areas (Atkinson, 2003). The residents of deprived neighbourhoods regularly come from different ethnic and religious groups, from different parts of the country or from different countries of the world and are then socially, politically, and culturally different from one another. This inevitably creates a potentially catastrophic scenario, where "disadvantaged difference is reflected in cracks that are visible in public spaces" (Madanipour, 2004, p. 271). Therefore, the lack of meeting places in the contemporary city leads to French anthropologist Marc Augé's (1994, p. 98) concept of 'non-places'. These spaces do not have a "single or relational identity" and only allow the coexistence of different individualities, similar and indifferent to each other. They are spaces of over-modernity where anonymity is its main feature. Madanipour (2003, p. 193) corroborates this trend when lamenting the new "impersonal spaces of the city".

As there is competition for the limited resources available, these public spaces become battlegrounds. Resistance often works outside the law and uses violence as an instrument to 'take space'. Lofland (1996, p.100, apud Carmona, 2010a) used the appropriation of space to describe these 'parochial' spaces. So, while some tend to dominate public spaces, others are intimidated, leading to a lack of safety and withdrawal from public areas and from engagement with others. As Mitchell (1995) shows, these new kinds of spatial policies allowed marginalized groups to create 'spaces of representation', through which they can present themselves to the general audience, i.e. the society. Marginal public spaces are then subject to severe competition between some of the stakeholders in the neighbourhood, as each group bids to dominate and appropriate the space. Two types of competition can be identified for the public spaces of a neighbourhood: competition for use and competition for development. While the former is a display of incompatible public behaviour by individuals and groups, the latter is a manifestation of institutional competition for control of space (Madanipour, 2004).

Compared to the better-off neighbourhoods or major urban sites, the public spaces of deprived neighbourhoods are often run down, with broad marks of vandalism and litter, giving the impression that these are leftover and neglected spaces. This shows the negligence by the main parties involved, first by local authorities, reflected in poor maintenance, followed by local residents, resulting in further physical degradation. As there is a noticeable connection between space maintenance and the perceived quality and use of spaces (Dempsey, 2008), it seems that these public spaces are not important for anyone, giving some residents the feeling of being abandoned, while displaying a poor image of the area to outsiders (Madanipour, 2004). Likewise, as private companies and businesses, particularly retailers, avoid these areas, the quality of its public areas is further negatively affected.

Carmona and Wunderlich (2013, p. 1) sum up this characterization in five distinct interpretations:

- Neglected space: Neglecting public space, both physically and in the face of market forces;
- Invaded space: Sacrificing public space to the needs of the car, effectively allowing movement needs to usurp social ones;

- Exclusionary space: Excluding the least mobile and most vulnerable in society through physical and psychological barriers to their participating;
- Segregated space: Following the desire of affluent groups in many societies to separate from the rest of society reflecting a fear of crime and simply the desire to be exclusive;
- Insular space: Failing to halt a more general retreat from public space into the technology-enhanced domestic realm or into virtual worlds.

The following picture (Figure 3.6) sums the discussion explored in this section and paves the way for the following one, regarding the security of these spaces.

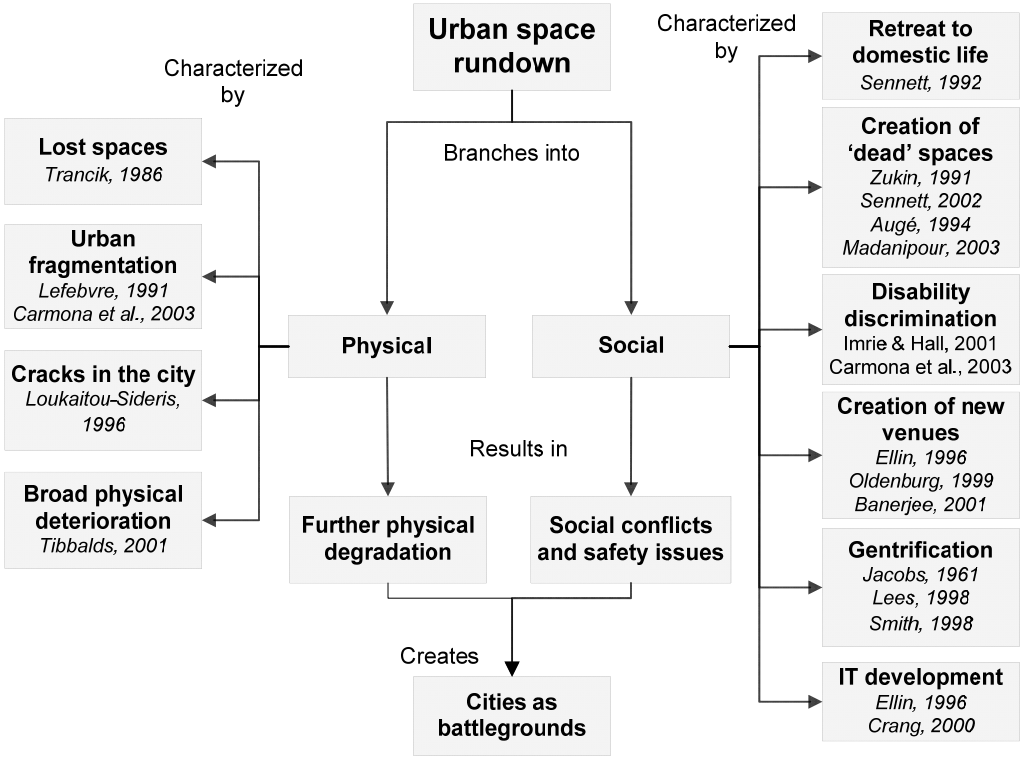


Figure 3.6 – Public space rundown debate

3.3.3. SAFETY AND SECURITY

In some sceptical records of the postmodern city, Lees (1998, p. 231) uses a war rhetoric to identify the city as a 'combat zone' and represent the street as its major battlefield. This progressive retreat from the overall public urban space can be explained generally by concerns about unwanted user activities and crime. Safety is largely connected with crime, as they usually share considerations and concerns. While crime is about "offenders and offences", safety is about "victims and the fear of victimization" (Oc & Tiesdell, 1999, p. 266). According to these authors, in analysing this relationship, two distinctions are essential. First, there is the distinction between crime and incivilities. While crime is defined as the transgression of the law and hence subject to prosecution, incivilities are minor disruptions in the normal operation of society, causing anxiety and apprehension. In fact, much of the critiqued behaviour around city centres is in fact the result of incivilities and not crimes, every so often referred to as 'quality-of-life crimes' (ibid.), 'street barbarism' (Jacobs, 1961), or simply anti-social behaviour. Fear vs. risk of victimization is the second distinction, which normally corresponds to the difference between 'feeling safe' and actually 'being safe' (Oc & Tiesdell, 1999). With a strong psychological foundation, this

distinction is where individual perceptions about personal risk and the features of a given place take shape. Summing up, it is the impact of people's concerns about crime that make the issues about security relevant, rather than the 'levels' or 'rates' of fear, often presented in a wide range of surveys and similar methods of analysis (Pain, 2001).

Crime-prevention measures, however, tend to ignore these distinctions, as they usually tackle crime rather than incivilities or the fear of victimization. Recently, cutbacks in municipal budgets have left urban public spaces damaged and unattended, furthering the image, if not necessarily the reality, of a dangerous space. Therefore, those in charge of these spaces needed to address actions in order to alleviate fear and foster a greater sense of safety. As a result, a lively debate arose on public spaces stressing the need for their enhanced role and their use by a wider public in order to maintain natural levels of surveillance and, thereby, security (Atkinson, 2003; Carmona et al., 2003; Davis, 1992; Zukin, 1995). Jane Jacobs had already defended this proposition in the 1960's, where she stated that the peopling of publicly accessible space was key to creating safer areas, in order to deter criminals and maintain a safe environment. This approach is based on two contentions. First that personal crime is more likely to occur in bleak, deserted areas, and second, that fear in public space often derives from the fact that there are few people around (Németh & Schmidt, 2007). This relationship is self-reinforcing because in order for spaces to be perceived as safe they must be well used. Still, users with a choice will only use spaces that they perceive as safe. Gated communities, for example, reflect the fear of crime on the most affluent groups of society into an induced social segregation (Carmona, 2010a; Kohn, 2004).

For Stewart and Mackenzie (1978), the feeling of safety is essential for any given space usage, statement which is corroborated by Francis (1989, p. 165) when declaring that the ability to "feel a sense of control over a space, to be able to see in, to escape easily, or to gain assistance in times of crisis are examples of how a place can be made to feel more secure". This rising tide of fear has led people out from public places and into home (Ellin, 2003). Location affects fear in the city in a number of scales, as for example "in micro-scale environmental features; the avoidance of neighbourhoods or city centres perceived as dangerous at certain times; and the influence of local constructions of identities, such as masculinity, femininity and race" (Pain, 2001, p. 911). This situation is aggravated at city centres, where the progressive population migration into the suburbs leads to its desertification or domination by the 'wrong kind of people', especially at nighttime. As a result, those with choice elect not to use the city centre, exacerbating the negative effects of a less used space (Oc & Tiesdell, 1998). Truth be told, "if people use space less, then there is less incentive to provide new spaces and maintain existing ones. With a decline in their maintenance and quality, public spaces are less likely to be used, thereby exacerbating the vicious spiral of decline" (Carmona et al., 2003, p. 111). Dempsey and Burton (2012) call the measures to avoid this tendency 'place-keeping'. Zukin had already stressed the role of multiple cultures and users of public spaces. For her, "the democratisation of public space was entangled with the question of fear for physical security" (Zukin, 1995, p. 27). In 'The Cultures of Cities' she went on to consider the role of culture in the economic base of cities and how this may spill over into the privatisation and militarisation of public space.

As a consequence, public spaces such as streets, parks and play areas are now the stages where "some of our worst personal and media nightmares are enacted" (Atkinson, 2003, p. 1830). This led to generalised feelings related to the fear of crime, defined by Rachel Pain (2001, p. 901) as "the wide range of emotional and practical responses to crime and disorder made by individuals and communities". The 'fear of crime' in the streets made the city dweller nervous of those exhibiting non-usual behaviours. In fact, fear was never absent from the human experience, and town building has always been contended with the need for protection from danger (Ellin, 2003). In the past, large stone walls kept communities and villages safe from unwanted intruders. In the postmodern world, the wall was replaced by its

electronic counterpart, the CCTV surveillance camera (Figure 3.7) and strict regulations and security guards complete the new security apparatus (Malone, 2002). CCTV's ease of use and presumed effectiveness made possible to patrol larger areas with the same amount of personnel (Koskela, 2000).

Figure 3.7 – CCTV cameras and control panel (Németh, 2009, p.2476; Oc & Tiesdell, 1998, p.94)

While apparently helping people to feel more at ease in public spaces, some authors mentioned the fact that the visibility of CCTV itself signifies potentially dangerous places which sensitises passers-by to the possibilities of insecurity in that space, while diverting crime to unserved areas (Fyfe & Bannister, 1996). Also, it can become an intrusive, humiliating and repressive means for controlling certain kinds of people, while identifying and excluding them based on appearance alone (Ellin, 1996; Koskela, 2000; Malone, 2002; Németh & Schmidt, 2007; Oc & Tiesdell, 1999). If indeed CCTV works towards the reduction of crime, it works preventively to impede its occurrence (Fyfe & Bannister, 1996). Although the surveillance camera has no eyes, it has a gaze, "always where the camera is" (Koskela, 2000, p. 260). Electronic surveillance, along with physical surveillance by the police and security guards, is classified by Lofland (1998, in Van Mélik et al., 2007) as direct instruments. Alongside with these direct instruments, the author defends the existence of several indirect measures. These, supported by physical design features, usually serve as restraints on loitering (Van Mélik et al., 2007).

Based on observations in Los Angeles, Flusty (1997, pp.48-9, apud Carmona et al., 2003) distinguished between five types of space designed to exclude by a combination of their function and cognitive sensibilities. 'Stealthy' space is space that cannot be found, as it is camouflaged or obscured by intervening objects or level changes. It is, in a way, the less oppressive and discriminating type of the lot. 'Slippery' space cannot be reached due to contorted, protracted, or missing access paths. It is also called 'introversion' space (Loukaitou-Sideris & Banerjee, 1998). Applying these measures to the inside of the space results in 'crusty' space, which cannot be accessed due to obstructions such as walls, gates, and check-points, representing the most visible and noticeable kind of exclusionary spaces. 'Prickly' space is a term called to places of deliberate discomfort and that cannot be comfortably occupied. Finally, 'jittery' space cannot be utilized unobserved due to strong active monitoring techniques, either by human or electronic means.

Designing a good public space is not the same as designing a safe space (Koch & Latham, 2013). Oc and Tiesdell (1999) defined four planning and design approaches with public space safety in mind: fortress, panoptic, regulatory and animated. The first approach takes into consideration the on-going process of public space privatization and imposing control schemes often leading to physical segregation. Although it is effective on the reduction of crime levels on the 'inside', the consequences

normally lead to its dispersion to other areas, as Fyfe and Bannister (1998) also defended. On the other hand, all the imposed constraints strangle the "enjoyment of the hardened environment" (Oc & Tiesdell, 1999), but also accentuate the fear of its users, particularly in areas of low risk.

The panoptic approach, on the opposite, is a result of a combination between explicit 'policing' presence and closed-circuit television systems. The term 'policing', as is used in these new public spaces, refers to the presence of private security guards who replace the basic functions of the regular police, in matters such as the detainment of possible offenders. Like the first approach, this excessive focus on security is usually criticized by placing concerns about social control and infringements of civil liberties, causing an increase in the fear of security. The regulatory approach, as the name entitles, is based on the enforcement of regulations, reflecting an increasing sense of proprietorship and 'ownership'. By establishing new explicit standards of acceptable public behaviour or vice-versa, personal freedom issues come to the debate. It is therefore questionable if some of these restrictions are in fact worthwhile. Regulatory and panoptic approaches are in fact closely related, as the first is more concerned about 'management' and the latter about 'control'.

Finally, the animated approach is based on the 'peopling of places' that Jane Jacobs (1961) defends. By having natural surveillance, the possibility of being seen by others increases and therefore crime is expected to decrease. This technique works therefore as a 'natural' and human panoptic approach. However, the public realm has to fulfil people's desires and expectations. According to Oc and Tiesdell (1999), it is necessary to intervene not only on the supply side to guarantee a relatively high range of activities, but also on the demand side to expand the range of age, gender, social and ethnic groups using the space.

For Koskela (2000) this new emphasis on surveillance changed the nature of space, creating a three-fold division. As a result, space can be understood as a container for social interaction, limiting the range of possible interaction, as a power-space, as the over-emphasis on security is used as a strong enforcement of authorities' power, or as an emotional space by changing the feelings of space users' and creating both positive and negative emotions on them. However, levels of fear in public space do not necessarily decrease as security measures increase, just as increases in actual safety do not necessarily increase feelings of overall security (Németh & Hollander, 2010). To solve these issues, measures such as the application of zero tolerance policies had also become a popular term. Imported from New York, a notoriously dangerous city, the strategy of coming down hard on minor offences to prevent the growth of more intractable problems became synonymous with low crime rates as well as gratuitous racism and violence (Atkinson, 2003). This can be understood as an extension of overtly zealous management of semi-private spaces (Fyfe & Bannister, 1998; Oc & Tiesdell, 1999) to an entire city.

On a different note, after the events of September 11th 2001 in New York city, entire city districts in some of United States' most important cities have been under constant threat of terrorist attacks, making protection at all cost the grand motto behind public space management (Marcuse, 2005, 2006; Németh, 2009; Németh & Hollander, 2010). Urban managers frequently cite concerns over potential terrorist attacks as their justification to increase security measures like the gates, moats and barriers fortifying many public buildings (Németh & Hollander, 2010). These new types of spaces usually place restrictions on issues such as place access and surveillance, but also mobility within the space (Table 3.2). Security zones, spaces studied by these last two authors in the city of New York, are spreading out in large American cities as a new type of land use, which requires incorporation into the urban space debate (Figure 3.8). Designed to protect public buildings and institutions from terrorist attacks mainly through specific design features, they argue that, despite being heavily controlled areas "it is possible to convert security zones into useable and useful public spaces". This means that "if security zones can be

programmed for public uses, if security measures fade to the background, and if users have a say in how spaces are managed and maintained, there is hope for new forms of public space" (ibid., p.32).

Table 3.2 – Security zone classification criteria (Németh and Hollander, 2010, p.25)

	Access	Surveillance	Mobility
Closed	Permanent physical impediments to access or entrances blocked	Security personnel exhibiting aggressive or menacing behaviour	Movement within space limited by both physical and legal restrictions
Limited	No entrances blocked but some temporary physical impediments to access	Security personnel present but unobtrusive	Behaviour limited by either physical or legal restrictions
Open	No physical impediments to access	No security personnel present	Movement within space unrestricted

However, some note that security concerns are nothing new, arguing that the terrorist attacks and the threat of terrorism did not launch a new debate about public space but served to intensify the already existing trends (Carmona & Wunderlich, 2013; Marcuse, 2006; Németh & Schmidt, 2007). Experts like federal planners and designers were already charged, since the middle of the 1990's, with designing out terror, creating a situation where 'form follows fear' (Ellin, 1996). The use of public authority to overrule the desires and needs of those with less power has in fact a long story. Large-scale urban renewal projects and gentrification processes are among several actions taken by the city's authorities, despite the known adverse impacts on its residents (Marcuse, 2006; Smith, 1996), and the consequent treatment of public space usually illustrates a possible increase in safety but an increase in insecurity. Manipulated false responses, using the threat of terrorism as a pretext to bring about changes that have nothing to do with physical safety or protection against terrorism, restrict and pervert the uses of public spaces, both "directly limiting political uses and indirectly restricting popular functions" (Marcuse, 2006, p. 919). 'Securing public space' today often means, in Larry Vale's words, "securing space from the public rather than for it" (ibid., p.922).

Figure 3.8 – Security zone, New York (Németh, 2010, p.2498)

Earlier, Marcuse (2005) had already categorized these 'false responses' into three different but interrelated categories. 'Spill over responses' are measures that have nothing to do with terrorism. To a certain extent, they simply extend anti-terror control functions into different concerns, such as

drunkenness or petty crime. On the other hand, 'induced responses' contribute to a vicious cycle where initial measures adopted for sake of security originate insecurity, which is then addressed by additional measures. Finally, 'pretext responses' are the most harmful of the lot, for they are simply used to impose restrictions on conduct that are otherwise an essential component of democracy, meaning that they are not related to the threat. Still, responses to terrorism can in fact target the goals in question, corresponding in this case to 'legitimate responses', which can also be divided into 'targeted' and 'balanced responses'. Still following Marcuse's analysis, targeted responses are effective responses intended to eliminate grounded threats of terrorism. They are oriented with the thought that all risks are real and that the process occurs with the minimum disruption needed. The goal of targeted responses is to eliminate essentially all risk from the targeted threat. Balanced responses, on the other hand, take into account the absolute costs of eliminating grounded threats, and attempt to strike a balance between physical safety and economic or social cost.

Consequently, the threat of terrorism is presented as an issue of security rather than of safety. In fact, the term 'security' underwent through substantial changes in meaning. Although at first it used to refer to protection against criminal conduct, nowadays it includes not only protection against a perceived threat of security but also as a means of social control. The distinction between security and safety is essential, in Marcuse's words, to understand the true impact of the current manipulation of the threat of terrorism. These manipulated responses stem from a transformation of the threat of terrorism into a threat to public safety and existential security. The use of the threat of terrorism to promote a sense of insecurity and its formulation as an issue of security rather than safety not only defends a particular political agenda but also sustains the system as a whole, and in a particularly important way as neoliberal policies and practices undermine the real safety of larger and larger groups of the population. The 'Right to the City' and the democratic use of public space is then an early victim of the process (Marcuse, 2005, 2006).

Scholars criticize this emphasis on security on two major grounds. First, the desire to attract a more orderly citizenry often comes at the expense of certain users reckoned objectionable or disorderly (Fyfe & Bannister, 1998; Mitchell, 1995). As public spaces are increasingly organized around consumption, welcoming those who contribute to the accumulation of capital by purchasing goods and services, those who fail to consume are discouraged and 'seen with other eyes'. Second, the identification of undesirable people requires a segregation of users into categories using concepts of appropriateness and orderliness (Németh & Schmidt, 2007; Sennett, 1992). As Mike Davis (1992, p. 155) refers, "the universal consequence of the crusade to secure the city is the destruction of any truly democratic space".

While policing, surveillance, and strict use regulations might increase the perception of safety, they can also contribute to accentuate fear by increasing distrust among users (Ellin, 1996). Major investments were made to reinvigorate dilapidated public spaces by banning cars, laying new pavements, installing street furniture, and so on. Each of these redesign projects seemed to take one of two directions. Either it created 'secured' space, taking steps to increase safety and reduce feelings of 'fear', or it induced 'themed' space, focusing on urban entertainment and 'fantasy' (Van Mélik et al., 2007). Entertainment, amusement, and other synonyms of recreation, are in fact an important sought experience by people as most of us hate being bored. On the other hand, the terms 'fear' and 'fantasy' might however induce an erroneous meaning. 'Fear' suggests a negative perception of certain places, while 'fantasy' has predominantly positive connotations. However, they are used in a neutral sense by the authors as secure and themed public spaces are neither negative nor positive developments. For instance, "themed events in public space might create a lively atmosphere, but they may also bring inconveniences such as noise and litter" (ibid.). This landscape of fear and privacy is also reflected in John Hannigan's 'fantasy cities' where the desire for experience without danger, as he puts it, leads us to create 'urbanoid spaces'

(Goldberger, 1996, in Atkinson, 2003). Here, a mix of consumption, entertainment, and popular culture promoted a privatized sense of city living, which although appearing to look like the traditional street, is stripped out of the diversity that it used to support (Atkinson, 2003).

The particularities of a given place are helpful in constructing a more diverse and realistic account of the fear of crime in certain social groups. Németh and Hollander (2010, pp. 22-23) sustain that "over-secured public spaces have had a disproportionately negative impact on some of the most marginal groups of society including (but not limited to) the poor, ethnic minorities, the homeless population and alternative cultures". Smith used for the same matter the term 'revanchist city' as in his understanding, "revenge against minorities, the working class, women, environmental legislation, gays and lesbians, immigrants became the increasingly common denominator of public discourse" (Smith, 1996, p. 45). In fact, excessive policy has been criticized by legitimating a growing revenge over certain areas of the population in an attempt to perform what Davis (1992) referred to as 'the securing of public space'. These developments overlap with current political thinking on issues such as "asylum seekers, aggressive begging, child curfews and cracking down on a street culture of yobbishness that holds the lives of decent citizens to ransom" (Atkinson, 2003, p. 1830).

Questions of age were one of the first discussions in the security panorama in urban areas. While at first there was an agreement that older people were in general more fearful than the rest of the society, there has been a shift in focus (Pain, 2001). A central discussion regarding this new security framework has been its influence on younger members of the society. Youth culture sees the street as the ideal place to exercise its own practices. These "include display, and gauging and swapping representations visually and in conversation, (…) talking, walking, meeting, making friends and fighting; swapping bootleg tapes and escaping home, going somewhere else" (Crouch, 1998, p. 162).

As was already seen in discriminatory measures due to concerns of fear, because of the visibility of youth in the streets, they are constantly under barrage of these regulatory practices (White, 1994, in Malone, 2002) and their competing use of street space positions them in the front line of conflict over its use. Valentine (1996) defends the thesis that many teenagers intentionally challenge the regulations regarding public space. In response, rules, such as curfews, are formulated by authorities and space managers to marginalize teenagers and young adults in public spaces. In fact, there is a mounting danger, as privatization of public space increases, that young people will be excluded from the places the 'public' now inhabits (France and Wiles, 1998, in Atkinson, 2003). Young people, having grown up in an era characterized by fear of crime and controlled social experiences are, according to Pain (2001), facing higher risks of victimization and moving towards a socialization of fear. The perception of youth as a potential threat places them in an ambiguous zone in relation to space. Many become undesirables and a source of anxiety, while others are seen as needing protection. For many young people, the street is the stage for performance, where they construct their social identity in relation to their peers and other members of society. Visible expressions of youth culture could be seen as the means of winning space from the dominant culture (Atkinson, 2003; Valentine, 1996). Besides young people and the overall stranger, women are also relatively weak victims of crime, largely because of fear of sexual violence (Pain, 2001). On the other hand, overly large levels of security and surveillance can be particularly constraining for women, reinforcing women's exclusion and restriction from public space. In asserting that women are only safe under heightened security, these measures may reinforce women's restriction from other, 'unfortressed', public spaces (Day, 1999).

All in all, and according to an interesting assumption by Kirby (2008), the changes in the built environment, increasing concerns over security and terrorism and the proliferation of information technologies can have profound impacts on the connection over public space and public sphere. These

changes can, in the inexistence of any sign requiring the connection among both, demand its severing. Figure 3.9 summarizes the public space security debate.

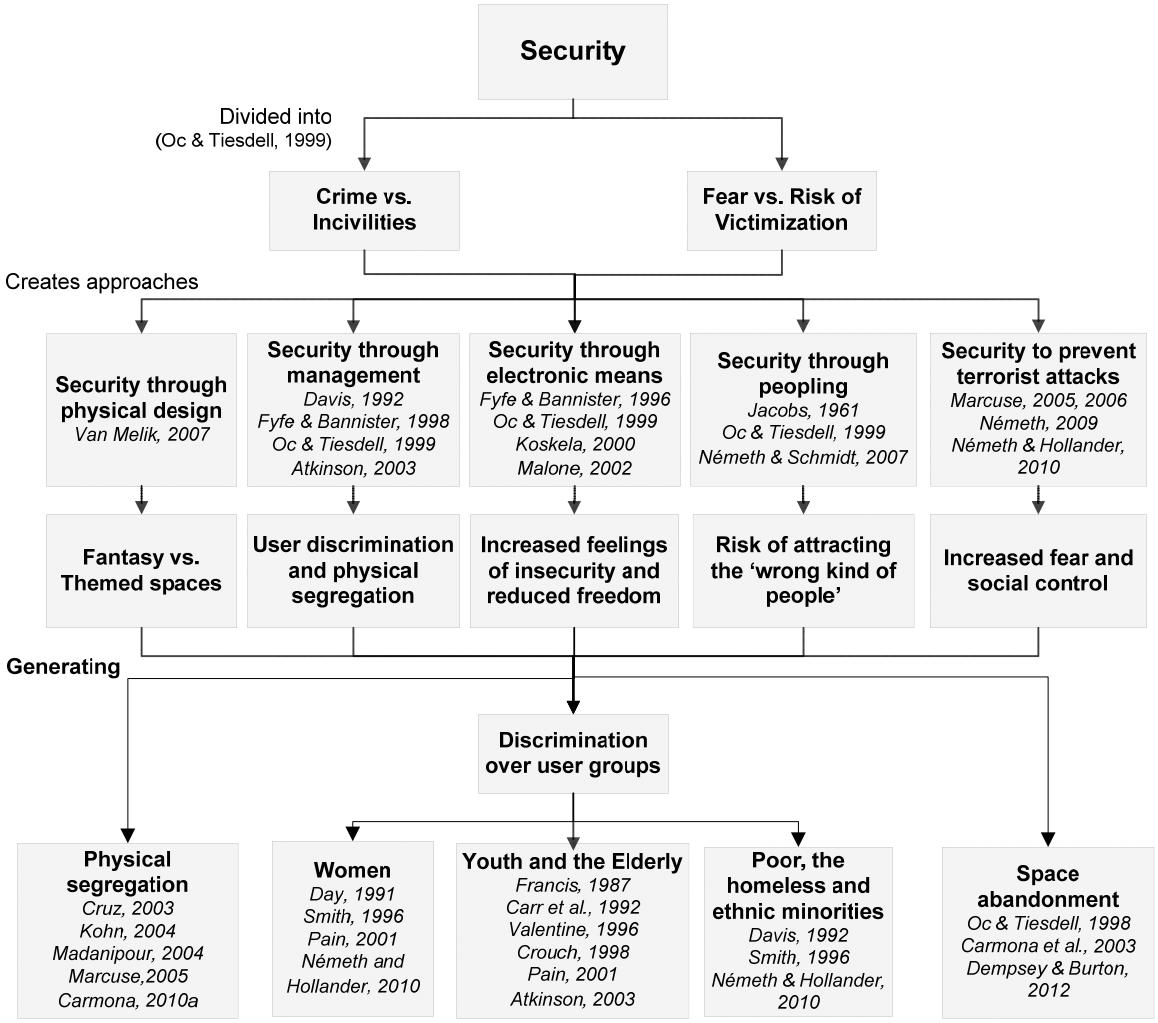


Figure 3.9 – Public space security debate

3.3.4. ACCESS AND CONTROL

As seen along this discussion, when moving towards securing public space, the sanctity of democratic access is questioned, suggesting a tension between the rights of citizen's access and safety (Atkinson, 2003). The main question that arises is simple. Should everyone be allowed access to these spaces at all times or should this be restricted to ensure safety? As public spaces are considered the lifeblood of cities and the sites where human interaction builds the urban society, more and more people are defending that they must be universally accessible and inclusive (Francis, 1989; Lynch, 1984; Madanipour, 2004; Marcuse, 2006). As public space is, indeed, empowering, Arendt (1958) was one of the first to recognize the need for an accessible public space, but more than this, the potential for a space to be used by all and be historically durable. Authors have therefore studied the importance of different levels and dimensions of access to public spaces. Francis (1989) division in physical/social/visual and Carr et al.'s (1992) division in physical/symbolic/visual access will form the basis of this discussion.

Physical access, one's ability to enter a space is public space's quintessential condition and therefore the most defended in the overall public space literature (Madanipour, 2004; Németh & Schmidt, 2007; OPDM, 2004; Project for Public Spaces, 2000; Tibbalds, 2001; Zukin, 1995). As public space is defined by the one to 'which normally people have unrestricted access and right of way' (Fyfe & Bannister, 1996), the essential quality of public space is its accessibility as the more open and unconditional the access, the more public it becomes. And it's not just physical access to the space itself that matters as Lynch (1984) and Lefebvre (1996) have for long stated the need for physical access to the activities and resources within them. This space feature also justifies its importance in Margaret Kohn (2004) and Benn and Gaus (1983) inclusion in their publicness definition.

Despite its importance, recent trends have shown the opposite. Fear, lack of consumption and concerns about anti-social behaviour were the reasons behind growing restriction measures aimed at improving the security condition of sites (Newman, 1972; Oc & Tiesdell, 1998) or targeted to certain members of the society, such as the poor, the homeless and teenagers, as presented in the previous section (Atkinson, 2003; Pain, 2001; Smith, 1996; Valentine, 1996). New types of urban spaces such as shopping malls, corporate plazas and gated communities created what Flusty (2001) termed 'interdictory spaces'. These all represent failures to manage adequately public spaces in order to achieve an equitable use by all groups while simultaneously keeping the welfare of the overall society (Carmona, 2010a). As seen before, public space offers a wide range of opportunities and meanings, linked with metaphors of discovery and escape. It offers "an opportunity, a place to be (as well as to be seen)" (Crouch, 1998, p. 162).

As a result, social access, representing the ways upon which a space is open to different classes or types of users, makes the second part of the distinction. This is where the discussion about discrimination processes take place. Universal access to the urban realm, and consequently to its public spaces, was one of Habermas' (1962) key features of the public sphere and one of the first to launch the importance of social access to achieve a more inclusive and dynamic community life. The right to be social and to interact with others was therefore explored thoroughly (Jacobs & Appleyard, 1987; Lefebvre, 1996; Miller, 2007; Mitchell & Staeheli, 2006; Németh & Schmidt, 2007), and even though Sorkin (1992) uses the term 'visibility' in his studies, in fact he is mentioning social visibility, setting the foundation for social interaction.

Fraser (1990), on the other hand, addressed the issue of public space access as a consequence of the existing democracy process. She argued that we should recognize the multiplicity of publics to which various social groups have different access and that it is only when members of all social groups are able to formulate their political identities, interests, and strategies that we can think of citizenship as being truly inclusive. Mitchell (1995), in his analysis of People's Park in Berkeley, however, shows different paths to where public space can be physically reconstructed to limit access to people who may depend on it for political activity or for their living, as governmental institutions and property interests attempt to manipulate and control access to public space and the activities that may be conducted in it. In a similar perspective, Carr et al.'s (1992) symbolic access concerns whether one feels welcome in a space. This dimension encompasses a broader spectrum of public space features than Francis' social access, as it can include all the features that affect a given individual's perception of the space, as is the satisfaction of its most basic needs.

The continued diminution of its access and use means that downtown planning must find other ways to democratize urban space or it will disappear along with its benefits (Turner, 2002). This can only be solved by an increased openness of public space that should include physical as well as social accessibility, i.e. access to the place and to the activities within it. In fact, without free and open access, a public space is not quite public (Madanipour, 2004). Access is an important prerequisite to realizing

many other dimensions of public space quality, particularly, the attachment of meaning to a given place (Francis, 1989, p. 164).

The last type of access is visual, or the ability to see into a given space, park or plaza (Carr et al., 1992; Francis, 1989). Visual access was also seen as a necessity for the definition of the public realm (Tibbalds, 2001). The main ideas behind the need for visual permeability and legibility in the design of space prove the need for a space to be visible to and from it (Bentley et al., 1985; Németh & Schmidt, 2007). In a similar note, Loukaitou-Sideris and Banerjee (1998) also mentioned the issue of visual access when lamenting the deliberate fragmentation of plazas designed to be visually inaccessible and thus exclusive.

Despite the fact that access is indeed an important aspect, none of these interpretations were created with the idea of analysing usage in mind. While some scholars identify high usage as an indicator of a successful space (Carmona et al., 2003; Jacobs, 1961), others argue that use itself should not be the only measure of success. An underutilized space, for example, may offer people a quiet, contemplative place from which to withdraw from the stresses of urban life (Loukaitou-Sideris & Banerjee, 1998). In addition, "activity alone is not a good gauge of the public values attached to a space", as for example "the use of an office tower plaza may be the result of a lack of meaningful alternatives" (Francis, 1989, p. 155). A summary of the debate regarding this feature of public space is presented in Figure 3.10.

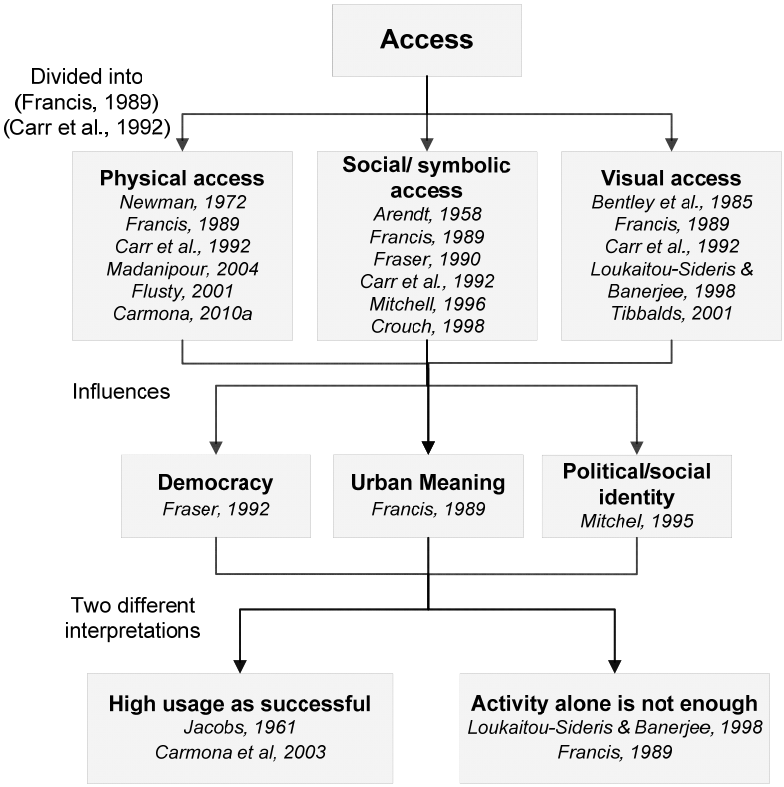


Figure 3.10 – Public space access debate

The goal of creating public space should extend beyond increasing the number of people who enter it, to providing space that hosts a diversity of uses and users (Loukaitou-Sideris & Banerjee, 1998). This is accomplished through control schemes. Although self-control is an idealistic goal, the reality points to the necessity to enforce some sort of control over a space, in order for it to maintain its desired features. Kevin Lynch, in his 1984's 'Good City Form', offers a useful starting point for the definition of the importance of control in quality of place, by proposing five forms of spatial control, through the

user's perspective: presence, use and action, appropriation, modification, and disposition. Presence is the right of access to a place. Forming a bridge with the previous debate, this is the most important of the five dimensions, as without access, use and action are not possible. Use and action involve one's ability to use a space, definition that can also be identified in Benn and Gaus' (1983) definition of 'interest' as the locus of control and decision making. In a more human dimension, appropriation allows users to claim ownership, either symbolic or real, of a site. Németh and Schmidt (2007) also defend ownership as a direct form of spatial control, in similar terms as what Kevin Lynch (1984) defined as 'appropriation'. As the sense of ownership increases, the user's concern for the quality of the environment often increases. Also, ownership can be either real or symbolic. Symbolic ownership "is a more common way users feel part of public places" and it can "also serve to invite people into a space by communicating a sense of caring or responsibility" (Francis, 1989, pp. 164-165).

Modification is the right to change a space to facilitate use, being understood as one of the most basic forms of spatial control (Carr et al., 1992). Finally, disposition is the ability to transfer one's use and ownership of a public place to someone else (Francis, 1989). These elements will be analysed with greater detail in the next chapter. As many parts of the everyday life are beyond one's control, people may be interested in controlling places they use (ibid.). This situation is common in marginal spaces, where control over use often appears spontaneously as a form of competition for use and development (Madanipour, 2004). Control of the land, on the other hand, appears when institutional entities enter the game, often aimed at preserving the space's intrinsic physical and functional qualities (Carr et al., 1992; Németh & Schmidt, 2011; Oc & Tiesdell, 1999). As space management is often understood as the "process of controlling the use of the resulting place and of maintaining and adjusting its form to satisfy changing needs" (Van Mélik et al., 2007, p. 30), Francis (1989) carried on the research regarding the imposition of control in public spaces by mentioning the existence of a differentiation between individual or group control schemes, reflecting varying degrees of intervention. In addition, time can be used to distinguish control methods, as it can be applied temporarily to a specific period, with ranging duration, or permanently in the most extreme situations. It also can be distinguished in terms of including inclusionary practices, inviting people into the process or place, or exclusionary ones, restricting opportunities for involvement or use. Lynch (1984) had already addressed the importance of control not only in timely but also in spatial terms for the creation of lively spaces.

As security is often used as a means of social control (Marcuse, 2005), Loukaitou-Sideris and Banerjee (1998) suggest that spatial management techniques can be grouped into hard (or active) control, and soft (or passive) control measures. Soft control focuses on symbolic techniques, such as access restrictions during non-business hours, small-scale urban design measures, or the removal of public restrooms or food vendors that might attract undesirable users. Oc and Tiesdell's (1999) four approaches are considered as an extended division of these control schemes, particularly the 'fortress approach', based on physical control and exclusion, the 'panoptic approach' based on social control, and the 'regulatory approach', targeted towards the control of basic freedom. Under the general category of hard control, legal and regulatory measures signal the appropriate use of a space and, consequently, what types of people are allowed (Németh & Schmidt, 2007). As a result, hard control often involves the use of surveillance cameras (Fyfe & Bannister, 1996), private security guards, and legal measures to bar certain activities like soliciting, smoking, loitering, or disorderly behaviour (Figure 3.11). The use of security personnel to maintain order is another known used technique. Business Improvement Districts (BID's) often hire private security guards to patrol neighbourhood and commercial areas for signs of disorder. This is one of the reasons why city officials found BID's to be a low-cost tool for providing the public safety and street maintenance services urban areas need to compete effectively with the new types of enclosed and controlled spaces, although with often negative effects over the excess of control that take place in these locations (Briffault, 1999; Low & Smith, 2006; Zukin, 1995).

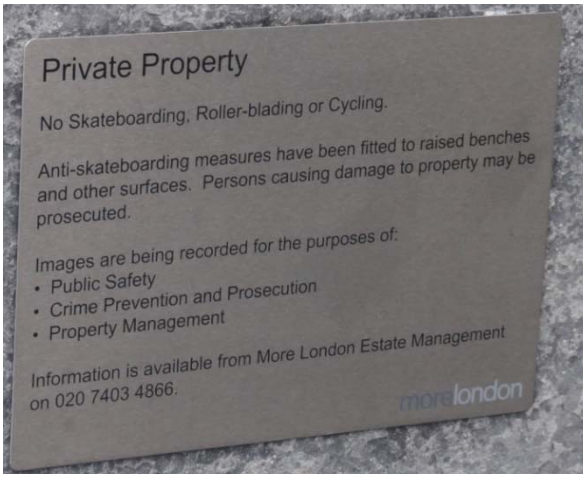


Figure 3.11 – Example of 'hard controls' in London, England

While studies have shown that people often feel safer in the presence of security personnel (Fyfe & Bannister, 1998), the overabundance of security often generates suspicion that a space is not safe enough to operate without such a significant police presence. Ellin (1996, p. 153), for instance, argues that while these new schemes of hard control will benefit some people by giving a sense of greater security, for others they will simply raise the levels of paranoia and distrust. Although hard controls measures have been growing (Carmona, 2010a), managers of urban spaces are now increasingly likely to prefer more indirect surveillance provided by the janitors, maintenance staff, valets, receptionists, and doorpersons working in the space or its immediate vicinity (Németh & Schmidt, 2007). Design, an example of soft control, can be used both literally and symbolically to control behaviour and use of publicly accessible space (Newman, 1972).

Sibley (1995, in Malone, 2002), on his work about exclusionary practices in public space, provides a helpful framework related to the creation of boundaries. A strongly classified space, says Sibley, has strongly defined boundaries, its internal homogeneity and order are valued and there is a concern with boundary maintenance to keep out objects or people who don't fit into the shared classification (or culture) constructed by the dominant group (the insiders). In these spaces, difference is not encouraged nor tolerated. In contrast, weakly classified spaces have weakly defined or open boundaries, and are characterized by social mixing and diversity. Difference and diversity in culture, identity, and activity in these open spaces is tolerated, understood, and sometimes even celebrated. Policing of these open boundaries is not as necessary, as there is less concern with power or exclusion (Malone, 2002). Sibley (1995, quoted in Malone, 2002), identifies these forces as the "purification of space", the need for clear, closed boundaries, internal homogeneity, order and the means for boundary maintenance, "in order to keep out objects or people who do not fit the classification.". Malone's (2002) distinction between 'open' and 'closed' spaces, and Franck and Steven's (2007) 'loose' and 'tight' space mimics this differentiation. Fyfe (1998, p. 7) criticizes this approach by saying that "purifying and privatizing spaces to enhance the consumption experience of some comes at a price of social exclusion and a sense of increasing inequality for others". In order to avoid the danger of the street exploring experience, residential desires for safety and social homogeneity are influencing the choices made by the citizens and planners, in what can be called a move towards security through domestication as an "understandable reaction to the perceived incivility of urban life" (Jackson, 1998, p. 185). These images drive the thoughts about the kinds of people that should be allowed to use public spaces. "Like an architect's sketch, the public is often White, male and wearing a suit" (Atkinson, 2003, p. 1841). This

generates a sort of dream of the perfectly ordered city, "in which the city is fully alienated from its residents, placed under total control: it is an authoritarian, even totalitarian, fantasy" (Mitchell, 2003, p. 230). The 'disneyfication' of cities and societies, the creation of themed parks and other spaces based on imposed feelings and ambiances are also control-based phenomena designed to an overall reduction of place attachment and meaning (Mitchell, 2003; Sorkin, 1992; Van Mélik et al., 2007; Zukin, 1995).

For Koch and Latham (2013), on the other hand, domestication is not negative for the overall public life as it has an important part in the discovery and subsequent use of the city by its citizens. Madden (2010) argues that this anxiety on social conflict and its effects on the public turned public spaces not necessarily less public but just at the mercy of on the dominant forms of power. Lees (1998) agrees that although there may have been an increase in the control and surveillance of public spaces, it is important to emphasize that public space has always been subjected to some kind of control and that it has never been truly 'free' and 'open'. As the public space of the street "is not pre-given, in either its form or its meaning, it is produced through contestation and social negotiation" (ibid., p.244). Therefore, public spaces change according to their social, economic, cultural, symbolic functions and meanings, but also throughout time. One of the main phenomena affecting public space and prompter of major structural changes has been its privatization process, set to discussion in the following section. Figure 3.12 represents the main aspects regarding the debate around the control of public space.

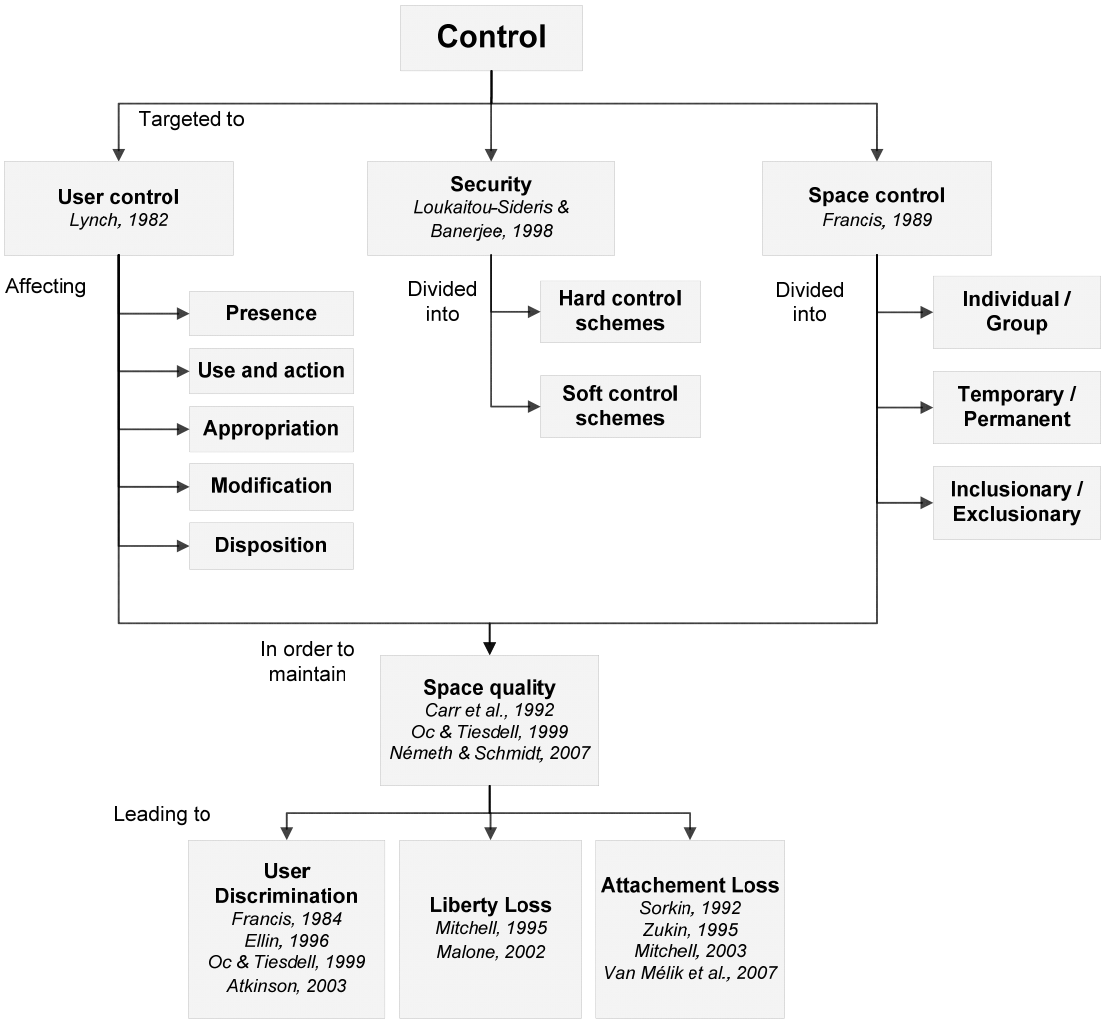


Figure 3.12 – Public space control debate

3.3.5. PRIVATIZATION

Towards the end of the 20th century, the planning system was facing two kinds of pressures targeting two opposite directions. On the one hand, there was a demand to embark on a stronger market-oriented strategy, helping the growth of the economy through a greater private sector influence and an increase in the exchange value of the built environment. On the other end, there was a pressure from below, demanding more flexibility, sensitivity, and a greater emphasis on use value through the improvement of the quality of the environment, but also of the quality of life of urban inhabitants (Madanipour, 1996). The changing functions of public spaces, and the assessment of who benefits from those changes, allowed the understanding of the appropriation of contemporary cities by a new and diversified range of actors (de Magalhães & Carmona, 2006).

Although for the market to operate there needs to be a balance between exchange value and use value of the built environment, as the nature of the market tends more towards maximizing the exchange value than maximizing its counterpart, the gap was widened leading to the privatization of public space in cities (ibid). The traditional functions of public spaces have encountered new challenges in public space provision and management, and, as a result, several important trends emerged. During the past 20 years, cities that were transformed once through industrialization are being transformed once again through deindustrialization and transition to the service economy (Madanipour, 2003; Van Mélik et al., 2007).

Privatization of public space was traced, according to different authors, from the historic emergence of downtown department stores (Crawford, 1992; Madanipour, 1996), to the rise of world fairs and theme parks (Carmona et al., 2003; Sorkin, 1992; Van Mélik et al., 2007; Zukin, 2007) and the widespread construction of suburban shopping centres (Atkinson, 2003; Banerjee, 2001; Carr et al., 1992; Crawford, 1992; Edensor, 1998; Kohn, 2004). This trend to the privatization of public space, bringing into prominence the Disney Company, Zukin regards as one in a continuing series of significant challenges in shaping urban public culture. She suggests that it is presently intertwined with matters of ethnic identity and fear for physical security in defining attitudes towards public space. She also insists that public spaces serve the same purposes now as in the past, notably to "frame encounters that are both intimate and intrusive", with the culture of the city (Zukin, 1995, p. 44). The term 'themed', particularly in association with 'fantasy', bears connotations of theme parks. In fact, many techniques borrowed by theme parks are being used to re-invent existing places. Early modern forms such as carnivals and fairs were progressively replaced by theme parks, shopping malls and festive marketplaces, where the common theme is this marketing of 'exotic otherness' and an attempt to "satiate the desire for otherness and sensuality" (Edensor, 1998, p. 211).

But it is not just this connection with the market and the user needs that marked the privatization process of the urban realm. Corporate and commercial interests have guided the process of privatization of public space, particularly through the closing, redesign, and policing of public parks and plazas (de Magalhães & Carmona, 2006; Francis, 1989; Low & Smith, 2006). As a result, most public-led urban regeneration initiatives started to be characterized by a transfer of power for the management of public space from the state to private individuals. In the United States, private-sector actors are quite common in the public domain of concerns, either as developers of publicly accessible space on private property within the context of incentive zoning regimes, or as managers of public spaces, for example, within business improvement districts (Van Mélik et al., 2007).

Many urban development decisions are made under fiscal and budgetary regulations (Lang, 2005). For banks and lending institutions in general, and for their owners, buildings represent a potential attractive source of profit. Public space, in this case, is only important to the extent that it affects investment decisions of private developers and management firms. Miller (2007) and Németh (2009) have been

studying this phenomenon of transfer of public air rights for the building of corporate plazas 'superficially' open to the public. Urban planners first introduced these 'bonus spaces' several decades ago in an effort to provide the private sector with attractive incentives to achieve certain public goals. Now quite common in major cities, these spaces are most often constructed in exchange for floor area ratio bonuses (Németh, 2009). This arrangement stipulates that developers may transgress the zoning code or raise buildings that exceed maximum building envelope allowances in exchange for the provision and perpetual maintenance of a publicly accessible space. The resulting 'bonus spaces' differ from their publicly owned counterparts in several ways. Individual owners and managers of bonus spaces are responsible for setting and implementing their own management techniques, as opposed to the experience of publicly owned spaced, "where rules and regulation are generally uniform throughout a park district or jurisdiction" (ibid., pp. 2467-2468).

Banerjee (2001, pp. 9-10) presents three key trends that contributed to the rise in bonus spaces. Firstly, due to a "worldwide campaign for market liberalism and downsizing governments", the capacity of governments to provide for the citizens shrunk considerably, leaving to the market the important task to regulate the provision of public goods and services. In addition, the speeding up of the processes of globalization, "characterized by the growth of transnational corporate power, international labour mobility, polarized local and global economies, and subservience of local public interest to interests of global capital" (ibid.) led to the capitalization of society and therefore, the city itself. Finally, the development of technology and communication methods altered the character of social relations and redefined concepts of place, location, and identity.

As seen before, the competition among cities in this contemporary globalized era was one of the triggers for the creation of large urban redevelopment projects, where the availability of large sums was an important prerequisite. Business Improvement Districts, particularly in the North American context, are a mechanism for providing the public services and investment that financially-strapped cities need if they are to survive (Briffault, 1999). These "self-taxing, self-help organizations" (Gross, 2005, p. 177) appeared as an alternative to the traditional municipal and merchant association development (Mitchell, 2001), monitoring and controlling local streets and parks (Briffault, 1999; Németh & Schmidt, 2007; Zukin, 1995), although some authors criticize BID's by characterizing them as a "response to the failure of local government to adequately maintain and managed spaces of the post-industrial city" (Mallett, 1994, p. 284). Nevertheless, in an era of tightly limited city budgets, and powerful challenges to the very legitimacy of urban government action, the "BID is a public-private hybrid that can function as an asset, not a threat, to the public sphere" (Briffault, 1999, p. 377). For this author, BID's activities range from physical improvements, to traditional municipal services, social services, and business oriented programs. Among them, the traditional municipal services of cleaning, maintaining, and patrolling city streets are the most important functions of most BID's in terms of budget, impact, and the public attention given to them. Generally, BID's typically lack any form of enforcement authority (Mitchell, 2001) and few provide social services, and, for those that do, such services are usually a relatively small part of their programs.

In England, Town Centre Management (TCM) partnerships provide a similar function, although with some major operational differences (Cook, 2009; Otsuka & Reeve, 2007). Initially developed as a response to the services provided by out-of-town shopping centres, TCM schemes, as opposed to BID's mandatory tax over affecting businesses, are funded by voluntary payments from the private sector. This is one of the reasons BID's appeared in this country as extensions of existing TCM schemes, in order to rectify the insufficient funding of the latter. The inexistence of a voting procedure for its introduction in a given area is also one of the differentiating features between the forms of private sector involvement in urban governance. In the end, although BID's originated from the withdrawal of the state they still

require a different form of state involvement, namely through the collection of state-gathered taxes, in order to raise the exchange value of spaces that want to remain 'public'. They are "neoliberalism personified" (Ward, 2006, p. 68).

In a sense, all BID services are business-oriented, whether it is promoting the districts, marketing the products of its businesses, recruiting and retaining businesses, attracting tourists and consumers, or working with individual firms and local industries. In fact, the more BID's shift their focus to business-oriented services, the less they present a threat of privatization. However, while city administrators and politicians may see BID's and other private mechanisms as reasonable means to accomplish economic development, such policies may reduce the expansion of public space and the creation of vital social capital (Turner, 2002), although this can be applied to all sorts of spaces under private influence. To Zukin (2007, pp. 133-134), Disney World's strategies for organizing space also influence business improvement districts. "Their first goal is to clean up an area, to keep it free of litter that the city's sanitations services cannot control", followed by an overall securing of the space "by erecting barriers or otherwise limiting public access and making rules about appropriate behaviour". With this, they "create their own sense of place not only be re-creating the attentive municipal services of another era but also by following Disney's lead in identifying theme and style with social order".

As a result, the privatization of open space also brought to the debate some basic questions regarding the true definition of a public space and its 'clients' (Francis, 1989). Some of the most frequent critiques around the new forms of public space are related with the degradation of public life, a perceived loss of authenticity and a growth of 'placelessness', focusing more on over-design than over-management (Carmona, 2010a; Goss, 1993; Knox, 2007; Sircus, 2007). Day (1999, p. 157) calls this process a promotion of the "aesthetic of artificiality – fake nature, fake history and fake quality". Shopping malls are often developed around a feeling of nostalgia, expressing "the 'dis-ease' of the present, a lament on the perceived loss of the moral conviction, authenticity, spontaneity, and community of the past; a profound disillusionment with contemporary society and fear of the future" (Goss, 1993, p. 25).

In these new created spaces social life is therefore "atomised, leaving individuals seeking narcissistic pleasures in 'placeless' environments devoted to consumer capitalism" (Crang, 2000, p. 305). Banerjee (2001, p. 13) points out that "entertainment-based corporate vision provides the script for uses of the 'public' realm and space". While sometimes it involves the creation of difference, in order to create distinction, it can, in other cases, promote the copy of a formula that worked with fruitful results elsewhere, even with the danger of affecting the intrinsic elements of continuity and character (Carmona, 2010a). Goldberger (2007) makes a contribution to this discussion with the concept of 'urbanoid' environments, namely the pseudo-street, the pseudo-square and the pseudo-plaza. As with humanoids that have some human qualities without being human, 'urbanoid' environments have some urban qualities without actually being urban. Although this has been a common practice for much time now, what appears to be new is that "the events are organized from the top down and are therefore regulated" (Van Mélik et al., 2007). Their constant growth, in size and number, is essential to sustain this ever more important entertainment function.

The shopping mall, one of the strongest figures of this appropriation of public space by private entities, "has abandoned the central city for the suburbs and which turns its back entirely on its surroundings with its fortress-like exterior surrounded by a moat-like car park" (Ellin, 1996, p. 168). This trend is parallel with the increasing fear of crime, rising competition from similar developments, and the escalating expectations of consumers, all encouraging the development of totally managed environments (Atkinson, 2003; Day, 1999; Jacobs & Appleyard, 1987; Madanipour, 1996). In fact, low-level criminality, often resulting from anti-social behaviour, is one of the biggest problem across many BID's (Briffault, 1999). As a result, the increasing commercialisation of public spaces has been adopted as a

familiar explanation for the increasingly restrictive codes that filter access to public spaces (Hannigan, 1998; Sorkin, 1992), forming here a parallel with the previously mentioned debate. Fundamental to the 'animation' approach is the already established assumption that crowded places are safer (Jacobs, 1961). Privatization of spaces through consumption and programmes of zero-tolerance policing arose at the same time as more compassionate ideas such as 'policing without the police' and the use of neighbourhood wardens to organize strategies to safeguard the public (Atkinson, 2003).

Although design and management strategies can be used to explicitly exclude certain groups and encourage others for the sake of security, financial reasons have also been the justification of similar strategies. Zukin (1995) cites the example of a revitalization and design-led strategy in Bryant Park in New York City where the expansion of the consumption uses and expectations of behaviour of its users were identified as 'domestication by cappuccino'. She confronts directly the withdrawal of the public sector and its replacement by private interests in the process of space definition. The space that interests Zukin is physical space, "places that are physically there, as geographical and symbolic centres, as points of assembly where strangers mingle" (ibid., p.45). The production of this space, a consequence of the "synergy of capital investment and cultural meaning", and the production of symbols in it, is a result of "both a currency of commercial exchange and a language of social identity", which are at the heart of her work (ibid., p.24).

Mitchell and Staeheli (2006) defended that the privatization of the public sphere can be included into the threat of the 'end of public space', and also raised the question, first framed by Lefebvre (1996) "Who has the right to the city?" In Lefebvre's thought, the right to the city not only means the right for every social group to be involved in all levels of decision-making but also the right to not be excluded from the spaces of the city, avoiding segregation. The right to difference, closely related to the latter, comes as a natural extension of the right to the city, meaning the right to freedom and to be free from pre-established classifications of identity. Mitchell (1995, 2003) argues that public spaces gain political importance when they are taken by marginalized groups and restructured as 'spaces for representation'. The creation of these 'differential spaces' or 'counter-spaces', according to Lefebvre, is the product of these processes of violent struggle. Through these segregation and exclusion measures, many privatized public spaces are also responsible for the reinforcement of race and class oppression and hostilities (Davis, 1991, in Day, 1999), attempting to "eliminate unwanted and feared political, social and cultural intrusions" (Loukaitou-Sideris & Banerjee, 1998, p. 280).

However, Murphy (2001, p.24, in Carmona, 2010a) highlights how exclusionary practices in order to counter undesirable social activities are not always the work of the private sector, but have also been increasingly more present in the public agenda. The 'exclusion zones' that result vary, but usually try to impose restrictions on actions such as smoking, skateboarding, alcohol consumption, begging, use of mobile phones and driving, etc. (Figure 3.13). Loukaitou-Sideris and Banerjee (1998, p. 280) argued for that matter that "space is cut off, separated, enclosed, so that it can be easily controlled and 'protected'". In fact, many planning and urban design measures to improve the sense of public safety resulted in 'fortress' cities, something that Oc and Tiesdell (1998) regret. These critics advocate the opposite approach: creating ambience and stimulating activity to attract more people to public spaces.

Figure 3.13 – Example of an alcohol exclusion zone in Newcastle upon Tyne, England

Privatization, therefore, is both a cause and a consequence of the decline of public space and the overall fragmentation of the city. For Németh (2009), this provision of spaces from the market creates locational asymmetries, as new spaces are created in already advantaged areas, where the market is willing to invest. Sorkin (1992) and later Madanipour (2003) noted a further cause of privatization inherent in the urban development process which gave rise to many new forms of urban space, such as the emergence of a new corporate city, dominated by multinational companies, leading to the end of traditional public space and producing a city based on consumption. Kirby (2008, p. 76) calls this process, a "re-mapping of capitalism on the urban landscape". For De Magalhães and Carmona (2009, p. 119), the changes in public space management are linked to "an evolution in the thinking about urban regeneration, its aim of bringing sustainable vitality and viability to urban areas, and the role of public space quality in this process". As exchange value becomes the essential feature, space becomes a mere commodity. This is, then, part of the process of 'commodification' of space, where space is approached, and treated, as a commodity, i.e., when it is treated as an object that can be bought or sold (Kohn, 2004; Madanipour, 2003; Sorkin, 1992; Zukin, 1995).

Summing up, corporate developers are generally very clear about the audience they aim to attract to their public spaces, selecting specific space features and tenants to appeal to different target markets. For Carmona (2014) none of this actively excludes other users, and developers sometimes find that the mix of users do not support the types of commercial amenities they have envisaged. Nevertheless, these commercial decisions to a large extent dictate use, and, once an area is occupied by a particular profile of users, this will tend to be self-perpetuating, and will only change gradually over time. After criticizing this new tendency, Zukin (2007) ends up agreeing that Disneyland and related themed spaces represent, through strong visual culture, spatial control and strict private management schemes one of the most significant forms of public space that emerged on the late 20th century. In the globalized world of city competition, diversity and inherent provision of new experiences is the key to success. The development of themed public spaces, characterized by this staging of a certain kind of publicness, does not mean the 'Disneyfication' of cities (Allen, 2006; Van Mélik et al., 2007). Although their constraints are real, so are its attributes and openness. Public spaces increasingly serve as venues for the arts and culture, typically for performances, festivals, concerts, parades and outdoor film shows. Hajer and Reijndorp (2001, pp.49-50, quoted in Carmona, 2010a) noted a large increase in the deliberate consumption of places and events, "the desire of the ordinary citizen to have 'interesting' experiences", the main goal

of the so-called 'themed' and 'fantasy' spaces, despite of all its known problems. "Commercialised public space, in the US at least, are now more often designed to enable social interaction of a particular kind and to facilitate certain types of reaction to the aesthetic and recreational objects around them" (Allen, 2006, p. 443). For this author, power relationships are enacted through a space's inherent qualities, its "ambient power", leaving aside previous areas of concern such as user exclusion and over-securitization.

In the end, Mitchell (1996) sums up perfectly the struggle around public space by organizing it around an inclusive ideal of public space by part of the leftists, rightists defending the establishment of greater public order, private developers seeking the creation of fulfilling spaces, and social critics imagining the ideal social space. Figure 3.14 sums up the debate around the privatization of public space.

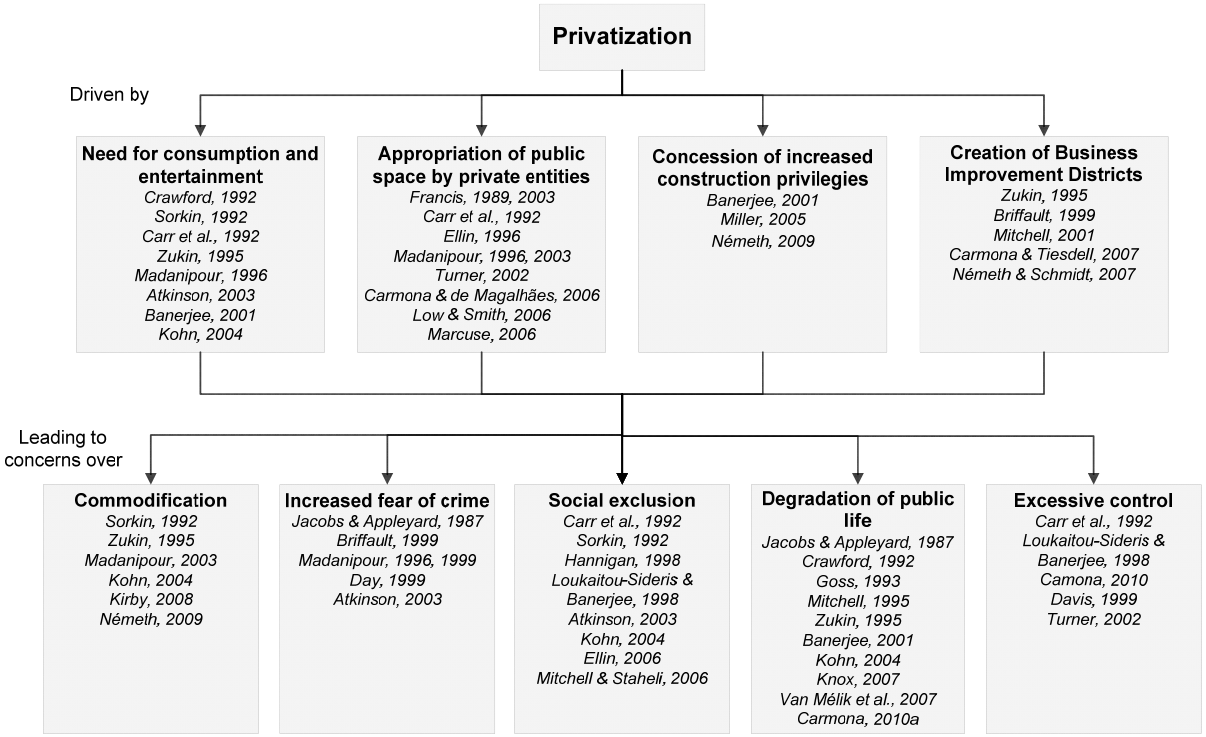


Figure 3.14 – Public space privatization debate

3.4. SUMMARY

It is difficult to assume, at first glance, whether public space is dead, has an unexplored potential or is indeed visibly expanding. Fostered by the modern method of city building, prioritizing fast travel between private realms, changes in society and economy, manifested through phenomena of globalization, and city competition, 'teamed up' with shifts in public authorities' investment approaches to an increasing physical rundown of public spaces. Combined with gentrification phenomena, IT development and increased competition for the use of spaces that retained desirable features, the fragmentation of society that followed turned cities into 'battlegrounds'.

The shrinking of the 'Right to the City', paralleled by the effects of the on-going shift from the public to the private sector of control and provision of public space, instigated a process where urban land has increasingly been treated as a commodity. Developers, who are increasingly 'owners of the city', create spaces in order to respond to their needs. When these same needs intersect with the ones of their 'customers', a positive contribution to the urban realm is achieved. When this does not happen, further

conflicts for the use of the space can intersect with growing fears for safety and excessive control. This extension of the private realm, manifested in new 'alienating' forms such as shopping centres, theme parks, corporate plazas, and BID's, is, in fact, both a cause and a consequence of the decline of traditional public spaces. The fact that some of the exclusionary tactics, commonly associated with spaces under private ownership, are being seen more frequently in publicly owned spaces shows just that.

Although, for the past decades, the urban citizen drifted away from traditional public space, focusing his attention to contemporary space typologies, the recent interest in the promotion of better public spaces can be seen as part of a larger plan to reintegrate and glue back together fragmented cities. When competition increases, the same happens to diversity and quality. New urban dynamics, phenomena of space appropriation and use, as well as the creation of new types of spaces justify the premise that in some situations the expansion of public space is indeed real. In any case, what appears evident is a rearrangement of public space to fit the needs of the overall society. Public spaces appear to have changed because public urban life has changed, and consequently public spaces need to adapt to public life, and not the other way round. This is the correct path to follow if we want to maintain public spaces as the centre of urban life.

A reflection about public space is necessary not only to comprehend its essence but also to understand and apprehend it in new ways. Although it seems that the classic concept of public space is no longer valid, there appears to be a consensus about the factors that make a successful space, being activity, a strong connection between space and user, and a good physical image and design, features that will probably be at the top of the list for a long time. Although every space is different and therefore requiring different approaches, the question of how to empirically readdress the concept of publicness emerges. The following chapter will address this issue.

4

DEVELOPMENT OF A PUBLICNESS ASSESSMENT MODEL

4.1. INTRODUCTION

As already stated in chapter 2, public space is a lengthily elaborate concept, with numerous ramifications, meaning that publicness, the major concept of this study, has been seen and discussed under different perspectives. Ranging from representing just the spaces' accessibility, characterizing spaces that are democratic by allowing free speech and debate, referring to the ability to foster or house community, or simply a social necessity by representing one's right to use public space, these interpretations of the concept of public space and the definition of its publicness demonstrate the existence of a strong set of relationships between space and people.

In this study, publicness will be summarily interpreted as the features of any given site or location in order to be considered as a true public space, i.e. the features that give a space its specificity. The uncertainties regarding the concept of public space make this task more difficult than initially expected. For instance, it is not essential for a space to be under public management, using one of the traditional definitions of public space, in order to become focus of this analysis. As the concept is constantly changing and evolving, a wide variety of urban spaces may not be interpreted, at first glance, as true public spaces. However, its further analysis may counter the initial perspective, and a space that initially was expected to 'fail' as a well-designed, adequately operating and properly managed space, might in fact work better as a 'true' public space than some of its counterparts, endowing it therefore with a greater degree of publicness. Still, the inverse scenario might also happen.

Any attempt to hypothesise publicness must therefore comprise multiple, inter-connected definitions, in order to reflect on the complexity of the concepts and its dynamics, and avoid the tendency to create a simple list of desirable features. Therefore, this chapter will firstly present the main existing studies concerning the analysis of the publicness of public spaces, in order to identify its flaws and strong points, and pave the way to the methodology that will guide this work.

4.2. EXISTING PUBLICNESS STUDIES

4.2.1. PUBLICNESS APPROACHES

Although section 3.2.1 presented the factors to successful public space as being high levels of activity, a strong connection between the space and their users, and a good image and form, their individual and isolated consideration can never be a strong foundation to the establishment of a useful publicness study. Benn and Gaus (1983) division between access, agency and interest, and Kohn's (2004) criteria of ownership, accessibility, and intersubjectivity, started to form the grounds for recent publicness studies. Akkar (2003, 2005) used the first set to measure the publicness of a series of sites in Newcastle, England. In this study, the data was organized in four sub-sets, to assess the evaluation of a space's publicness before and after a rehabilitation project, over four different stages: planning and design; construction; management and maintenance; and use. This allowed the assessment of the different agents' aims, objectives and resources, and the development and use processes and activities, allowing the introduction of a time dimension in the analysis of the outcome of the process. The publicness analysis in the most recent stage, the one of use and operation, composed of three main axes, is of the most importance to this work (Akkar, 2003, pp. 104-106):

Access – the 'openness' of the space itself, its resources, activities and information;

- whether the new public spaces are physically accessible to everybody, such as the disabled, teenagers, homeless people and so on;
- whether the activities and discussions taking place in the new public spaces are accessible to everybody;
- whether the new public spaces as resources are open to everybody.

Actor – the management and control and the use public gives to it;

- how far the public and public actors were involved in activities and discourses of the planning and design phases of the public spaces;
- how far public actors owned, planned, designed, constructed, and now manage and maintain the public spaces;
- how far the public uses public spaces.

Interest – the degree of fulfilment of the public interest;

- What is/are the benefit(s) of private actors, public actors and the public, after the development of the public spaces?
- Is there any increase or decrease in the 'public interest', which the public spaces serve after their redevelopment?
- Is there any balance between the benefit that private actors got and the benefit that the public got after the development of the public spaces?
- How far were the major design principles determined through the consent of the majority of public and private actors?

Overall, this is interesting in a management standpoint, as it allows capturing the influence of different management schemes in the overall process of space overhauling, as well as giving insights about their flaws and virtues. It is useful, for instance, to evaluate the impacts of the privatization of a given space. Based on visual observation and interviews, this study fails in one important aspect, as it does not provide a systematic analysis method to neither evaluate the changes in publicness, nor quantify the publicness 'per se'. This is in fact a common denominator to previous interpretations of publicness, such as the ones of Benn and Gaus (1983) and Kohn (2004), as neither of them explore thoroughly the dimensions neither mention ways over how to define the criteria. They only give what can be interpreted

as guidelines, dimensions over which studies must focus. As a result, the operationalization of publicness analysis models was an important step to consider in subsequent studies.

Németh and Schmidt (2007, 2011) were the pioneers to address this theme, with their study of 151 public spaces in New York City. First targeted to analyse the influence of security and access restriction schemes, i.e., the control over these spaces, the study evolved into a methodology for evaluating publicness, by including factors such as rules of use, design features, access restrictions, and surveillance schemes, divided in 20 variables (Table 4.1).

Table 4.1 – Composition of Németh and Schmidt's publicness index (Németh and Schmidt, 2007, p.288)

	Approach	Scoring criteria
Features encouraging use		
Sign announcing "public space"	Laws and rules	0 = none present 1 = one small sign 2 = one large sign or two or more signs
Public ownership or management	Surveillance and policing	0 = privately owned and privately managed 1 = publicly owned and privately managed 2 = publicly owned and publicly managed
Restroom available	Design and image	0 = none present 1 = available for customers only or difficult to access 2 = readily available to all
Diversity of seating types	Design and image	0 = no seating 1 = only one type of stationary seating 2 = two or more types of seating or many moveable seats
Various microclimates	Design and image	0 = no sun or no shade or fully exposed to wind 1 = some sun and shade, overhangs, or shielding from wind and rain 2 = several distinct microclimates, extensive overhangs, trees
Lighting to encourage night-time use	Design and image	0 = none present 1 = one type or style of lighting 2 = several lighting types (e.g., soft lighting, overhead, lampposts)
Small-scale food vendors	Design and image	0 = none present 1 = one basic kiosk or stand 2 = two or more kiosks/ stands or one larger take-out stand
Art, cultural, or visual enhancement	Design and image	0 = none present 1 = one or two minor installations, statues, or fountains 2 = one major interactive installation or frequent free performances
Entrance accessibility	Access and territoriality	0 = gated or key access only 1 = one constricted entry or several entries through doors/ gates only 2 = more than one entrance without gates
Orientation accessibility	Access and territoriality	0 = space not visible and oriented away from public sidewalk 1 = space visible but oriented away from public sidewalk 2 = space visible and oriented away from public sidewalk

	Approach	Scoring criteria
Features controlling use		
Visible set of rules posted	Laws and rules	0 = none present 1 = one sign or posting 2 = two or more signs or postings
Subjective or judgment rules posted	Laws and rules	0 = none present 1 = one rule visibly posted 2 = two or more rules visibly posted
In a business improvement district (BID)	Surveillance and policing	0 = not in a BID 1 = in a BID with maintenance duties only 2 = in a BID with maintenance and security duties
Security cameras	Surveillance and policing	0 = none present 1 = one stationary camera 2 = two or more stationary cameras or any panning/moving cameras
Security personnel	Surveillance and policing	0 = none present 1 = one private security guard or up to two public security personnel 2 = two or more private security or more than two public personnel
Design to imply appropriate use	Design and image	0 = none present 1 = only one or two major examples 2 = several examples throughout space
Presence of sponsor or advertisements	Design and image	0 = none present 1 = one medium sign or several small signs 2 = two or more large signs
Areas of restricted or conditional use	Access and territoriality	0 = none present 1 = one small area restricted to certain members of the public 2 = large area for consumers only or several smaller restricted areas
Constrained hours of operation	Access and territoriality	0 = open 24 hours per day, 7 days per week, most days of year 1 = at least part of the space open past business hours or on weekends 2 = open only during business hours, or portions permanently closed

This index, divided into features that encourage use and features that discourage/control use, clearly represents the targeting of this study's effects over publicness from specific control and access schemes, one of the most discussed themes regarding public space. Therefore, the higher the score, the higher is the freedom of use of the space. On the inverse path, the lower the score, the more controlled the space is.

Although being an interesting approach, it fails to include the complex nature of public space and its publicness. The authors drift from the consideration of the broader aspects of public space operation, such as the far-reaching relationship between space and users, through the measurement of the sociability and 'vitality' levels of the space, which are not easy to assess. The study is then highly focused on the way authors interpret public spaces and publicness, and not on the ways the space's users might interpret it. Also, some assumptions are dubious. For instance, the fact that the incorporation of a space into a Business Improvement District immediately reduces the publicness value does not seem

appropriate as the benefits of alternative forms of management when applied to spaces where the traditional public administration-based management scheme 'does not work' are not applied. Yet, this can be a consequence of the adaptation to the American context, more precisely to the city of New York, where BID's are widespread and usually targeted towards the reduction of user's freedom.

Still, some of these critiques are easily explained. This model is part of a larger project, designed to culminate in a tri-axial model (Németh & Schmidt, 2011), based on three dimensions: ownership, management and use/users (Figure 4.1). Hence, the previous table only shows the operationalization of the management dimension of the model. The ownership dimension can be defined, according to the authors by a crossing between public and private ownership and operation. Both ownership and management define the potential for publicness which will then be operationalized in the use/users dimension, i.e., how the space is used and perceived. Although this study addresses the theme of publicness supported in the phenomena of space privatization and the creation of privately managed public spaces, by looking at the 'larger picture' it is visible an articulation with the features that make a successful space. By referring to this research as a 'work in progress' and part of a larger project, the authors defend that a more robust model is still in the way that will, hopefully, present insights on the remaining two dimensions. Still, the graphic representation already implies that each one of these three dimensions intersects each other.

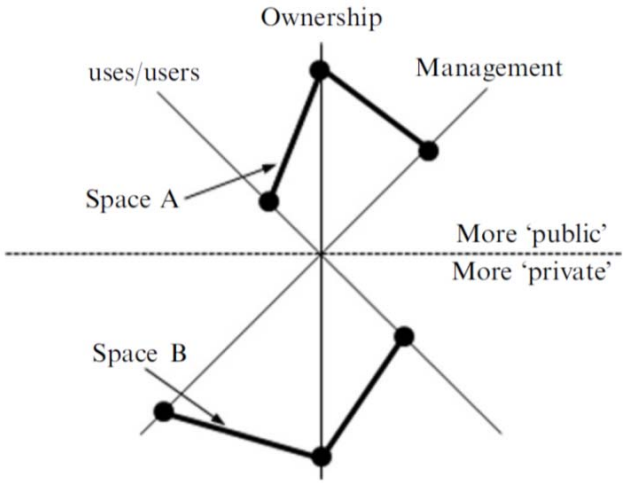


Figure 4.1 – Németh and Schmidt's tri-axial model (Németh and Schmidt, 2011, p.12)

The relationship between space and users is indirectly addressed in the study of Van Mélik et al. (2007). Their model presents some insights on how to evaluate public spaces, by focusing on two of the major current tendencies behind public space creation and management, using the duality 'themed space/secured space', i.e. spaces focused on entertainment and 'fantasy' vs. spaces oriented to safety and the reduction of 'fear'. Six indicators represent factors such as surveillance, regulation, animation and commercialization, divided into three levels of intensity: low (L), medium (M), and high (H), presented in Table 4.2.

Table 4.2 - Van Mélik et al. operationalization of secured and themed public space (Van Mélik et al., 2007, p.34)

Dimension	Description	
Secured public space		
1. Surveillance	L	No CCTV
	M	CCTV is installed, footage is recorded
	H	CCTV is installed, footage is watched live
2. Restraints on loitering	L	Benches are present, public space cannot be fenced off
	M	Benches are present, public space can be fenced off
	H	No benches available
3. Regulation	L	Arranged by regular local ordinance, enforced by local police
	M	Arranged by regular local ordinance, enforced by local police and private security
	H	Arranged by special ordinance, enforced by private security
Themed public space		
1. Events	L	No organized events
	M	Events are organized, no permanent facilities available
	H	Events are organized, permanent facilities available
2. Funshopping	L	No shops present
	M	Majority of shops of 'run' nature (i.e. convenience stores for groceries or appliances)
	H	Majority of shops of 'fun' nature (i.e. stores with discretionary shopping goods)
3. Pavement cafés	L	No pavement cafés present
	M	Present, partial coverage of terraces (10-50 per cent of total surface)
	H	Present, high coverage of terraces (> 50 per cent of total surface)

This model completes, in a way, the previous analyses, by focusing on an untouched relation, the way the space promoted certain feelings over its users. These qualities are then represented using a cobweb diagram, featuring six radiating spokes, one for each of the indicators, and three concentric levels (Figure 4.2). Therefore, the larger the enclosed shape the greater amounts of theming and securitizing over a given space. Still, although this model gives additional insights to this work, it does not try to represent publicness under its full potential, meaning that it is under the same degree of criticism to the study of Németh and Schmidt.

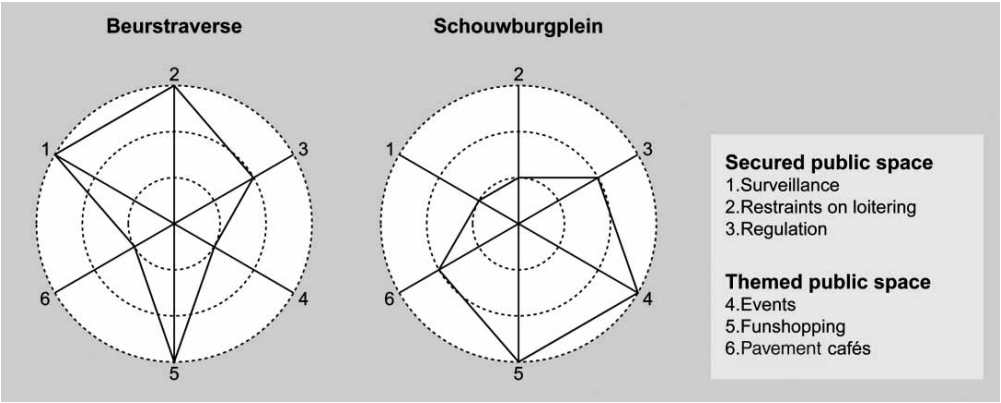


Figure 4.2 – Van Mélik et al. example of two spaces' dimensional profile (Van Mélik et al., 2007, p.37)

Varna and Tiesdell (2010) carried out a publicness research bringing it to new levels, by presenting an analysis targeted to analyse the complex nature of publicness. As a result, this study is not directed to a specific area of analysis or to the consequence of changing management schemes. Addressing five main dimensions, those being ownership, control, civility, animation, and physical configuration, this study sought insights undiscovered in previous works. Each indicator, similarly to Németh and Schmidt's

model, is associated with a publicness scale, in this case adopting values from 1 to 5. Table 4.3 presents a summary of this model.

Table 4.3 – Varna and Tiesdell's indicators of publicness (Varna and Tiesdell, 2010, pp. 590-591)

	MORE PUBLIC 5	3	LESS PUBLIC 1
Ownership			
Ownership	Public	Public-private	Private
'Headline' function	Public	Transit interchange; retail premise	Private
Control			
Purpose of control	'Big Father' (policed state)	-	'Big Brother' (police state)
Control ordinance	Any additional site-specific rules and regulations enacted in the wider public interest	-	Additional site-specific rules enacted in a narrower private interest
Control presence	No visible/overt control presence or security guards	Subtle/non-visible expression of control presence	Highly visible/overt expression of control presence
Control technology	No CCTV cameras evident	Some CCTV cameras evident	Many CCTV cameras evident
Civility			
Physical maintenance and cleansing regime	Cared-for; well kept; proactive maintenance practices	Caretaking staff; proprietary staff	-
Physical provision or facilities	Provision of facilities for basic needs	-	Lacking basic amenities and facilities
Physical Configuration			
Centrality and connectedness	Well located within the overall movement network; desire lines within surrounding area into and through the space	-	Poorly located within the overall movement network; desire lines do not continue into and throughout the space
Visual permeability	Space has strong visual connection with external public realm	-	Space has weak or non-existent connections with external public realm
Thresholds and gateways	Implicit/invisible thresholds and entry points	Thresholds and entry points signified by, for examples, changes of materials	Explicit thresholds and entrances, with active constraints on access
Animation			
Opportunities/potential for passive engagement	Multiple opportunities for people-watching; formal and seating opportunities; well-located to observe activity within the space	-	Few reasons for people-watching; few seating opportunities
Opportunities/potential for active engagement	High density/ proportion of active frontages; seating well located; diversity of events and activities	-	High density/proportion of blank inanimate frontages; few events and activities
Opportunities for discovery and display	'Loose' space – adaptable, un-restricted spaces, used for a variety of functions	-	'Tight' space – fixed, physically constrained or controlled relating activities

It is visible on the previous table that, by addressing a number of distinct dimensions, the study of Varna and Tiesdell represents a more comprehensive approach to the study of a space's publicness. The introduction of insights regarding the level of physical connection with the surrounding environment and the definition of thresholds, as well as the assessment of the opportunities for social interaction is a step forward for the research. Still, it fails to address further implications of the management schemes into the operation of the spaces, namely regarding the level of involvement of the authorities with space users and the consideration of their needs. Also, it does not report the connections between the different dimensions, by considering each one of them individually, and often by mixing certain elements within the same indicator which can enter into conflict. An example regards the join of the space's activity and seating, factors that can be interpreted separately. This is one of the limitations this research will try to overcome.

In addition, Varna and Tiesdell's study sought new and more efficient ways regarding the presentation of the results, mainly by a new way of representing each space's score, by the use of a graphical diagram, termed by the authors as "Star Model" (Figure 4.3). This model allows for a clear visualization of a given space performance over each one of the five dimensions, by a smaller or larger branch of the star. Therefore, a full star represents a high level of publicness, while an eroded one represents a weak level. Although interesting to compare different pairs of spaces, as the sample size grows, this type of graphical representation may become of difficult interpretation.

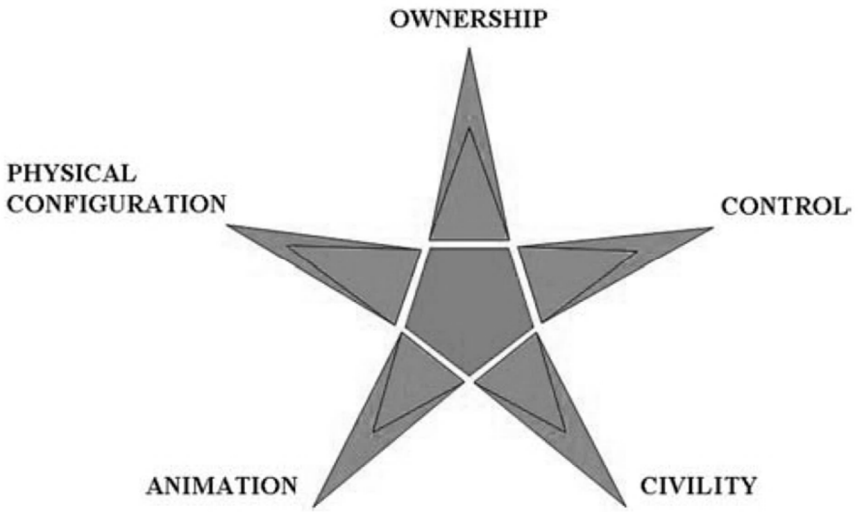


Figure 4.3 – Varna and Tiesdell 'star' model (Varna and Tiesdell, 2010, p.594)

A more recent study, by Langstraat and Van Mélik (2013) divided publicness into four major dimensions: ownership, management, accessibility and inclusiveness. For the authors of this study, this methodology compares the main indicators of the involvement of the private sector in the public space (ownership and management), with the consequences of this involvement (accessibility and inclusiveness) (Table 4.4). As a result, it is not aimed to be a measure of public space performance. Again, this model defined a graphic representation, this time in the form of a pie chart (Figure 4.4). Evidently, this model shares dimensions and indicators with the previously developed models, which can be seen in the description of the indicators in the following table.

Table 4.4 – Langstraat and Van Mélik's indicators of publicness (Langstraat and Van Mélik, 2013, p. 436)

Ownership		
1.	Fully private	Legal ownership rests solely with a for-profit organization that is not publicly accountable
2.	Private with some public characteristics	Majority of legal ownership rests with a for-profit organization, but local government has a minority stake; or legal ownership rests with a private not-for-profit organization
3.	Public with some private characteristics	Majority of legal ownership rests with local government, but for-profit organizations have a minority stake; or legal ownership rests with an independent not-for-profit organization that is democratically accountable
4.	Fully public	Legal ownership rests solely with the local government
Management		
1.	Fully private	Security and maintenance are provided by independent private parties only
2.	Private with some public characteristics	Security and maintenance are provided by a combination of public bodies and independent private parties
3.	Public with some private characteristics	Private parties are involved in maintenance and security, but local government and the police have ultimate authority
4.	Fully public	Maintenance and security are the responsibility of local government and the police alone
Accessibility		
1.	Fully private	Physical barriers to access; a visually inaccessible design, resulting in a 'stealthy space', a geographical location that makes it difficult for certain groups to reach the space; lack of accessibility by public transport
2.	Private with some public characteristics	Meeting, but not all of the criteria of fully private
3.	Public with some private characteristics	Meeting some of the criteria of fully private
4.	Fully public	Meeting none of the criteria of fully private, in other words, the place is equally accessible to all members of the public
Inclusiveness		
1.	Fully private	There is a restrictive policy on activities allowed in the public space, and street furniture is completely absent or intentionally 'sadistic'
2.	Private with some public characteristics	Seating and lighting are available, but no other attempts are made to welcome non-consuming visitors, and a restrictive policy on activity allowed is still in place
3.	Public with some private characteristics	Seating and lighting are available, but no other attempts are made to welcome non-consuming visitors; no explicit restrictive policy on activities allowed is in place
4.	Fully public	Meeting the demands of a wide variety of users is an official policy goal

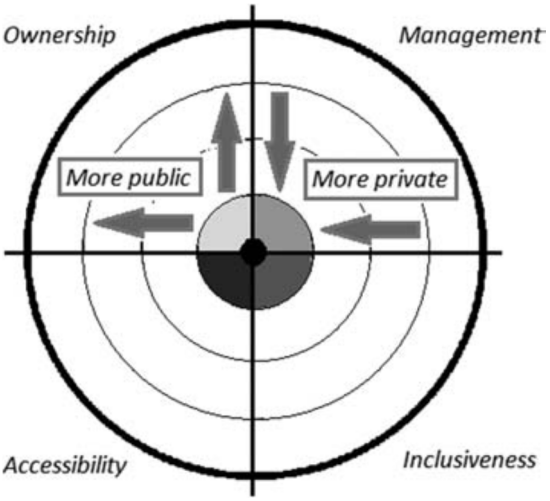


Figure 4.4 – Langstraat and Van Mélik model of publicness (Langstraat and Van Mélik, 2013, p.435)

This study intended to examine the influence of different areas of publicness, particularly its management, into some of its most important features. One important conclusion was the inexistence of any connection between the different aspects of publicness, meaning that privately owned spaces were not necessarily worse than its public counterparts were. Still, an opportunity to explore in detail each of these publicness dimensions still exists. For instance, there is mention to a "future research to more fully investigate the feelings, perceptions and subjectivities behind the publicness of public space for different user groups" (Langstraat & Van Melik, 2013, p. 446).

A common critique has to be made to all studies, regarding a certain uncertainty concerning the importance of each of the assessed elements. This means that all studies seem to attribute the same importance, i.e. the same weight, to all the used indicators. Although this requires finding out what elements are of greater importance, it is a necessary step to attribute greater real world applicability to a study of this nature. Nevertheless, this summary shows that, although recent, the study of urban spaces' publicness has already seen distinct approaches, focusing on different aspects affecting public space operation, design, and management. In comparison with other themes of public space studies, it was demonstrated that publicness analysis is still a significantly recent branch of research, attributing pertinence and a timely validity to this study.

More recently, a new study emerged in this area, on yet another attempt to evaluate public space, although this time not directly using the term 'publicness'. In Mehta's (2014) study, this evaluation was divided into five different dimensions, being inclusiveness, meaningful activities, comfort, safety, and pleasurability. Here, the aspects of space accessibility, flexibility, safety, comfort, and sensory experience were combined through the use of 45 different indicators, creating what was designated as Public Space Index. This study also combined visual observations with a number of user surveys, in order to determine their perception of the space, something that previous studies failed to address. These surveys were then used to weigh the different used indicators, in order to favour the most valuable indicators.

Table 4.5 – Mehta's publicness evaluation (adapted from Mehta, 2014)

Variables	Weighing	Scoring	
Inclusiveness			
Presence of people of diverse ages	0.4	0 = very limited 1 = low	2 = medium 3 = high
Presence of people of diverse genres	0.4		
Presence of people of diverse classes	0.4		
Presence of people of diverse races	0.4		
Presence of people with diverse physical abilities	0.4		
Control of entrance to public space: presence of lockable gates, fences, etc.	1.0	0 = high 1 = medium	2 = low 3 = none
Ranges of activities and behaviours	1.0	0 = very limited 1 = low	2 = medium 3 = high
Opening hours of public space	1.0	0 = < 10h 1 = at least 10h	2 = most hours 3 = no restrictions
Presence of posted signs to exclude certain people or behaviours	1.0	0 = very much 1 = moderately	2 = somewhat 3 = none at all
Presence of surveillance cameras, security guards, guides, users, etc., intimidating and privacy is infringed upon	1.0		
Perceived openness and accessibility	2.0	0 = not at all 1 = some parts/ at some time	2 = mostly 3 = completely
Perceived ability to conduct and participate in activities and events in space	1.0	0 = cannot in most 1 = only in some/ at some time	2 = in many 3 = in almost all
Meaningful activities			
Presence of community-gathering third places	2.0	0 = none 1 = one	2 = two 3 = few
Range of activities and behaviours	1.0	0 = very limited 1 = low	2 = medium 3 = high
Space flexibility to suit user needs	1.0	0 = none 1 = somewhat	2 = moderately 3 = very flexible
Availability of food within or at the edges of the space	2.0	0 = none 1 = one	2 = two 3 = three
Variety of businesses and other uses at the edges	1.0	0 = none 1 = very little	2 = moderate 3 = high
Perceived suitability of space layout and design to activities and behaviour	2.0	0 = not suitable / not at all 1 = somewhat	2 = moderately 3 = very
Perceived usefulness of businesses and other uses	1.0		
Comfort			
Places to sit without paying for goods and services	2.0	0 = none 1 = few	2 = In some parts 3 = In many parts
Seating provided by businesses	1.0		
Other furniture and artefacts in the space	1.0		
Climatic comfort of the space – shade and shelter	2.0	0 = not comfortable 1 = somewhat	2 = Comfortable in some parts 3 = Comfortable in most of the space
Design elements discouraging use of space	1.0	0 = several 1 = few	2 = one or two 3 = none
Perceived physical condition and maintenance appropriate for use	2.0	0 = not at all 1 = somewhat	2 = mostly 3 = very much

Variables	Weighing	Scoring	
Visual and physical connection and openness to adjacent streets or spaces	1.0	0 = almost none/ very poor 1 = somewhat	2 = moderate 3 = very well connected
Physical condition and maintenance appropriate for the space	1.0	0 = not at all 1 = somewhat	2 = mostly 3 = very much
Lighting quality after dark	1.0	0 = very poor 1 = many parts not well lit	2 = mostly well lit 3 = very well lit
Visual and physical connection and openness to adjacent streets or spaces	1.0	0 = almost none or very poor 1 = somewhat	2 = moderate 3 = very well connected
Physical condition and maintenance appropriate for the space	1.0	0 = not at all 1 = somewhat	2 = mostly 3 = very much
Lighting quality after dark	1.0	0 = very poor 1 = many parts not well lit	2 = mostly well lit 3 = very well lit
Perceived safety from surveillance cameras, security guards, guides, ushers, etc. providing safety	1.0	0 = make me feel unsafe 1 = not at all	2 = some sense of safety 3 = provide a sense of safety
Perceived safety from crime during daytime	2.0	0 = not safe at all 1 = somewhat unsafe	2 = mostly safe 3 = very safe
Perceived safety from crime after dark	2.0		
Perceived safety from traffic	2.0		
Pleasurability (for detached plaza, square, park)			
Presence of memorable architecture or landscape features (imageability)	1.0	0 = none 1 = very few	2 = moderate 3 = several
Sense of enclosure	1.0	0 = very poor 1 = moderate	2 = good 3 = very good
Variety of subspaces	1.0	0 = none 1 = very few	2 = moderate 3 = several
Density of elements in space providing sensory complexity	1.0	0 = none / very few 1 = few	2 = moderate 3 = high
Variety of elements in space providing sensory complexity	1.0	0 = none 1 = very little	2 = moderate 3 = high
Design elements providing focal points	1.0	0 = none 1 = one	2 = moderate 3 = high
Visual and physical connection and openness to adjacent streets or squares	1.0	0 = almost none/ very poor 1 = somewhat	2 = moderate 3 = very well connected
Perceived attractiveness of space	2.0	0 = not at all 1 = somewhat	2 = moderate 3 = very much
Perceived interestingness of space	1.0		
Pleasurability (for attached plaza, square, park)			
Sense of enclosure	0.7	(see classification for detached plaza)	
Variety of subspaces	0.7		
Density of elements in space providing sensory complexity	0.7		
Variety of elements in space providing sensory complexity	0.7		
Design elements providing focal points	0.7		
Visual and physical connection and openness to adjacent streets or squares			
Perceived attractiveness of space	2.0		
Perceived interestingness of space	1.0		
Permeability of building facades on the streetfront	0.7	0 = not at all 1 = some parts	2 = moderately 3 = very
Personalization of buildings on the streetfront	0.7		
Articulation and variety in architectural features of building facades on the streetfront	0.7	0 = poor 1 = somewhat	2 = moderate 3 = very

Some criticisms can be made to this study. First, although there is a wide range of indicators, for the majority of them there is no clarification regarding how to classify them. For instance, it is not possible to easily judge the difference between a medium and a high level in what concerns a space's level of control of entrance. This situation is replicated in a number of indicators along the study. Although this study considered, and well, the users opinions and perceptions about the space, it appears to rely too much on this measure of evaluation, as almost 40% of the indicators that form each space's classification are based on a small sample of users. Still, it is important to register the main conclusions of this study, mainly that the conducted user surveys led to the conclusion that good public spaces are ones perceived to be open and accessible, in proper physical upkeep, comfortable to be in, and with proper seating provision. Safety from crime and visual accessibility are also seen as important. On the other hand, less ideal spaces were considered as having a limited range of activities and behaviours, while not being flexible to the needs of users, and with few surrounding businesses. Permeability and articulation of the surrounding buildings with the space are also some factors to take into consideration.

4.2.2. WEAKNESSES AND AREAS OF IMPROVEMENT

Most of these studies did not intend to fully explore the concept of publicness, but only to focus on specific features of public space and aspects of its operation. They can therefore be understood as means to achieve a larger goal, meaning that this study can then take inspiration from all these examples in order to fully address the issue in hand. The different specificities of urban spaces should be taken into consideration and all the connections between them must be found. This way, this study can shift away from the tendency to create a mere list of desirable features or reduce the concept to a single continuum (Németh & Schmidt, 2011). In these studies, it was seen that the groundwork to develop a publicness study, although important to understand the effects of the recent urban dynamics and phenomena over the city's spaces, cannot evolve from an evolution of the distinction between public and private spaces. Assigning a label of public or private is not as simple as checking whether a space meets a list of criteria (Kohn, 2004). Although the work from Németh and Schmidt (2011) considers ownership schemes as a direct criteria to define part of their publicness index, the consideration of issues related to safety, comfort, visual quality and animation justifies their approach over the features that make a successful space. Therefore, the study must find support in these elements, in order to effectively characterize a space.

4.3. AREAS TO ASSESS

The themes over which the publicness of urban spaces is structured were organized into four main dimensions, features that will be presented ahead. So, the methodology forming the basis of this study will start with a focus on the assessment of the more operative aspects of public space, mainly regarding the elements and features that promote a vibrant urban life. The choice to start with these elements is easily explained, as without people and consequent activity public spaces simply do not work. This dynamic analysis must also be completed with a static one, through the identification of the space's physical features. Therefore, the second section of the analysis will focus on the physical design elements, essential to define the overall structure of the space and define what can or can´t happen there.

Thirdly, and in a way combining the two previous dimensions, the study will focus on the elements needed to evaluate the relationship between space and users, chiefly around the ones that promote a sense of identity and that contribute to the establishment of a stronger feeling of citizenship, following the line of thought regarding the debate on what makes a successful public space, as seen in section

3.2.1. To go beyond the sole point of space ownership, often understood differently by different people, and responsible for either positive or negative outcomes, the last section will focus on the implications of different management schemes over the spaces' publicness degree. For each of these four dimensions, a set of indicators will be defined in order to assess both the intention of designers, public authorities and private developers, and its outcome in the final product, resulting in a growing publicness scale.

4.3.1. URBAN LIFE

All good cities have distinctive identities and characters, in what is normally referred to as a 'pulse', a rhythm of everyday life, or simply an 'urban buzz'. These features, essential to define the place context, tend to spill over to the urban inhabitants, moulding their social character. This is well articulated by Zukin (1995, p. 266), who argues that there isn't a single primordial vision of the city's public and "no vision of how to balance the needs of the 'public' and of 'space' in the symbolic economy". Users' actions, reactions, and interactions are essential in the understanding of a space's response to user's needs and how its publicness is defined. Therefore, observation of people's actions would aid in a systematic and purposive investigation of how certain places are used as well as detailed description of multiple user characteristics. John Zeisel (1981) in his classical work 'Inquiry by Design', describes observing behaviour as systematically watching people use their surroundings: individuals, pairs of people, small groups, and large groups. This observation study focuses on how this set of public places harbours a wide range of activities and various types of public behaviour. Observation methods aid in 'empathetic' understanding of the settings and contexts in which participants behave.

When assessing the urban life of a space, the first step consists in the evaluation of its possibilities for use. Free and universal access is understood by many as a quintessential feature of public space (Akkar, 2005; Benn & Gaus, 1983; de Magalhães, 2010; Madanipour, 2003; Miller, 2007; Németh & Schmidt, 2007; OPDM, 2004). Unrestricted access can take many forms, but the most basic one is the inexistence of a temporal restriction, allowing full access at any moment, when users most see it fit. On the other end of the scale, if certain sections remain permanently closed to the public, the possibilities for use are severely restricted, affecting negatively its publicness. A midpoint is the enactment of an operation schedule, often associated with privately owned spaces and can occasionally be found in publicly owned spaces, for the sake of keeping minimum conditions of safety. This feature takes shape during a space's project phase and has the potential to take a significant toll on its freedom.

In fact, this freedom is not always fully materialised, as the restriction of the right to the city based on security concerns is commonly materialized in restrictive measures, affecting "the right of use and action, of behaving freely in a place or using its facilities" (Lynch, 1984, p. 205). For Lynch, this freedom involves the ability to be free in terms of the uses and performed activities, but always with the recognition that a public space is a shared space. Marcuse (2005) identifies as examples measures such as restrictions on the everyday use of public space, access to public buildings, restrictions on political expression and assembly for political purposes, on the freedom of immigrants to use public facilities and services in the city, increased segregation, exclusion and concentrated decentralization of residents and economic activities, and restrictions on privacy and freedom from surveillance. Indeed, "urbanity is attractive, so long as it can be rendered friendly and harmless by excluding poverty and all that is associated with it – crime, drugs, and violence" (Goldberger, 2007, p. 171). Although the establishment of a sense of security is essential to promote public space use and retain the 'migration' to safer semi-public spaces such as shopping malls, there are clearly different routes to achieve a sustainable goal where diversity and safety go hand-in-hand. The question is therefore not whether we want safer urban spaces, but if the current trends that work towards the solution of this problem will actually deliver the

public places that many people desire (Atkinson, 2003). A stronger or weaker intention to limit uses in a given space, usually as a result of conflicts of interest with its owners, can only be effectively materialized if users are aware of these restrictions. In fact, rules can be "flexibly and differentially enforced in order to sustain an illusion of openness while maximizing management's control" (Kohn, 2004, p. 13). As a result, the presence or not of specific visual cues, enacted through the form of informative signage, signalling forbidden or inappropriate behaviours, apart from the ones indicating civic behaviour, or uses and its intensity is the most adequate method to measure this feature.

Places, and especially public spaces, are valuable if they offer choice. For Bentley et al. (1985, p. 12), choice can be interpreted at two different levels. First, by using a quality called 'permeability', the authors argue that the degree to which an environment allows access through it and among the city's different sites is a key indicator of its responsiveness. Therefore, permeability is important at two levels: first, by defining the links that connect the site to the city as a whole, and second by the links that connect the site to its immediate surroundings. This is especially important in central urban locations, as "people come downtown to be immersed in the town, not to seek refuge from it" (Crankshaw, 2009, p. 162). The use of complex methods of spatial analysis, such as space syntax (Hillier, 1996), to calculate the connectivity and centrality of a given space, although preferable, are not suited for this case as they are mostly used to assess a space's or area connectivity in a broader urban or even metropolitan scale. Pedestrian accessibility works on a much smaller scale and aspects such as public transport accessibility are of greater relevance to a space's connectivity and accessibility increase. Also, the introduction of this method would limit the model's ease of use, as well as increasing considerably the amount of required workload.

However, choice can also be defined at an experiential level, understood by the Bentley et al. as 'variety'. Here, variety can be understood as the opportunities a given space can provide to its users. To better support active engagement, play, and discovery, places need to allow for spontaneity and unscripted, unprogrammed activities. Franck and Stevens (2007) discuss the notion of 'loose space', and develop a typology around ideas of 'looseness' and 'tightness'. Loose space is adaptable, un-restricted, and used for a variety of functions, according to the initiative of the space's users. On the opposite side, tight space is fixed, physically constrained, or controlled regarding the different activity types that can occur there. It is important to note that this looseness varies across time and users, as public spaces often serve different purposes throughout the day and different users interpret them in a distinct way.

As activities in public spaces are generally public activities, they do not need to be separated from one another. The goal here is to define a space occupation pattern that can efficiently house as many activities possible, without making them interfere with each other. The potential for robustness is closely intertwined with the activities that take place in the surrounding buildings and spaces. If a space is designed to allow the extension of some of the indoor activities to the adjacent public space, the result can be easily identified by increased activity levels and reinforced place robustness (Bentley et al., 1985). Also, once variety of use is achieved, others will follow. In fact, a place with varied uses has varied building and land use types, attracting varied people, at varied times, for varied reasons. For Lynch (1972), public spaces and especially city centres, should be capable not only of attracting people but also of keeping them at different times of the day and different days of the week. In the end, this provides a rich perceptual mix, allowing for different interpretations and, therefore, different meanings (Montgomery, 1998; Tibbalds, 2001; Worpole & Knox, 2007).

This shows, once again, that public spaces are intrinsically related to its surroundings. Responding to the ideals of Jacobs (1961), Lynch (1984), Jacobs and Appleyard (1987), movements such as New Urbanism (Congress for the New Urbanism, 1996), emerged, in the United States, in response to the suburban sprawl and its 'dead' public life. By bringing people closer, community values will be

recovered and cities and its public spaces will benefit as a natural consequence. Evolutions of this concept, such as Ellin's (2003) 'Integral Urbanism', focus on qualities such as hybridity, connectivity, porosity, authenticity, and vulnerability. By proposing interventions on a finer scale that contribute to 'activating places' by making connections among existing working spaces, but also caring for neglected and abandoned "in-between" spaces, it represents a great potential for underused or underdeveloped public spaces.

Although different spaces are designed for different use intensities, much regarding the vitality of a public space can be assessed from the simple observation of its usage patterns. Whyte (1980), for that matter, considered that off-peak use provided the best indications to users' preferences, as when a place is crowded, people tend to use the available spaces and not the ones they consider best, in a process of spontaneous self-levelling. This is well evidenced in seating patterns as in crowded spaces people sit where they can rather than where they most want. As public space use is characterized by large amounts of heterogeneity, in relation to not only space but also regarding time, the analysis of a space during peak periods is important to assess the true potential of a space's capacity to host a diverse range of uses and users, situation that will not, most likely, happen during off-peak periods.

However, these spaces cannot be designed nor used for all the goals simultaneously. Gehl (2001, 2004) illustrates how the environmental quality of public spaces affects the intensity of their use, by defending the division of outdoor activities into three categories: 'necessary', 'optional', and 'social' activities. Necessary activities are 'almost compulsory' and include, for example, going to school or work, shopping and waiting for a bus, and will take place regardless of the physical environment. Optional activities are described as taking place 'if there is a wish to do so and time' and may take, for instance, the form of walking for fresh air, standing, sitting or sunbathing. Being optional, these activities may only take place if the weather or place makes the setting desirable. Finally, social activities are considered an evolution from necessary and optional activities. These depend upon the presence of others and may include children's play, greetings, and conversations, communal activities and the passive activities of watching and hearing other people. These can, according to Gehl (2004, p. 82), be called "resultant activities", as they develop in conjunction with the first two types of activity categories. Besides these three distinct activity types, Gehl's concept of 'Life Between Buildings', developed in the 1970's, represents the most passive and low-intensity form of contact. Although seemingly insignificant, if it disappears, the boundaries between being alone and being together vanish as well, thus making the fundamentals for the establishment of social activities.

When spaces are of 'poor' quality only 'necessary activities' will occur, turning them into movement-only spaces. Spaces hosting a small variety of activities during peak periods, although representing an improvement, are not lively enough to the establishment of a strong set of public interactions. Based on the literature review stating the importance of a large range of activities (Jacobs & Appleyard, 1987; Moughtin, 2003; Project for Public Spaces, 2000; Tibbalds, 2001; Whyte, 1980), it was assumed that only when we reach the target of four distinct uses that we start to see the true benefits of a lively space. A total of six distinct behaviours/activities were selected for assessment. Apart from the general categories of strolling, sitting, and standing, common in all public spaces, this study also included the activity of 'eating/drinking', either in designated consumption spaces or in a more informal setting, and categories related to the recreational aspects, more common in other public space types, as are the case of sport activities and child play. Recent literature has also shown a tendency for people in mobile phones to linger more and for longer periods (Hampton et al., 2014). As a result, and although the use of technologies in public space could be signalling a form of social introversion, it is also a measure of space quality, as these activities could take place in other physical settings. A six-way division was therefore selected:

- Strolling
- Standing
- Sitting
- Playing sports/ Child play
- Using mobile phone/ computer
- Eating/ drinking

A natural consequence of a larger variety of uses is greater user heterogeneity, as a combination of different age groups and genders is a strong indicator of a space's vitality (Atkinson, 2003; Carr et al., 1992; Cooper-Marcus et al., 1998; Jacobs & Appleyard, 1987; Oc & Tiesdell, 1998; Varna & Tiesdell, 2010; Whyte, 1980). For Whyte (1980, p. 17), the best used places are sociable places, with a higher proportion of couples, "more people in groups, more people meeting people or exchanging goodbyes". Although "the more diverse the range of user groups, the more difficult it will be to develop appropriate criteria for design and management" (Carr et al., 1992, p. 244), the benefits for this diversity are undeniable. Women, spending more time to evaluate the possibilities a space offers (Whyte, 1988), tend to seek "back yard" experiences, associated with comfort and security, while men opt for the opposite "front yard" experience, valuing social interaction and involvement (Cooper-Marcus et al., 1998, p. 27). Although there is a need to avoid domination by a single user group (Jacobs & Appleyard, 1987), fearing the appropriation by the "wrong kind of people" (Oc & Tiesdell, 1998, 1999), there is little guidance on how to measure this diversity. Age, declaring the youth and the elderly as 'sensitive' users groups in public space (Atkinson, 2003; Carr et al., 1992; Crouch, 1998; Francis, 1987; Pain, 2001; Valentine, 1996), was therefore the attribute for the classification of user group heterogeneity. As the real age of public space users could not be determined by visual observation, from a distance, the following five-way division was estimated to minimize error:

- Children
- Teenager
- Young adult
- Middle-age
- Elderly

As a perfectly equal distribution is mostly unlikely, since the space physical and urban setting has the potential to greatly influence its user distribution, a series of set intervals were defined. A space with less than 25% of a given group was considered to be weakly dominated, while 75% presents the opposite scenario. For sheer indicative purpose, a division of users in genders was also determined, using the following division:

- White
- Black
- Asian
- Others

For the application to European cities, this division was deemed the most appropriate, as it does not impede adaptation in different social and ethnic contexts. However, it is not just how these uses are characterized, but also how do they occupy the physical space. According to Alexander et al. (1977), as users usually enjoy looking at the pedestrian flow and the street life it represents, public spaces use is usually more concentrated around its borders and edges where people gravitate. Only when full, its gradual occupation will naturally turn inwards. A complex edge containing seating and gathering spaces formed by niches, stairs and recesses create pleasant spaces, encouraging space users to linger (Crankshaw, 2009; Franck & Stevens, 2007). Gehl (2001, p. 148) calls this the "edge effect". For this

reason, Alexander et al. (1977), Gehl (2001), and Marcus and Francis (1990) add that, despite this centripetal movement, very wide open spaces are often avoided with its users tending to search for areas which balance exposure and enclosure, and favouring a combination of unobstructed views of street activity and a degree of privacy. As the full occupation of the space would not be possible, the values of 25 and 75% of total space area occupation at peak periods were selected as division points of use spatial distribution, with a 1 meter radius defining each user's personal space.

The suitability of a space for optional and social activities can also depend on the average duration of user stays (Carr et al., 1992). Whyte (1980, 1988) identified 5, 10 and 20 minutes stays as major distinction points for the differentiation of activities in New York City's squares. For the purpose of this research, and given the chosen length of each observation period, presented at the end of this chapter, 10 minutes was seen the obvious target value. As not all activities would last this maximum duration, if 50% of the total of visible activities at peak hours lasted for 10 minutes or longer, the space would achieve maximum score in this indicator. On the other hand, if no static activities would be visible, i.e. a 'movement-only space', a poorly classified space would be signalled.

Despite the apparently large variety of activity types, the existence of movement is key to the creation of urban activity, with special regard to pedestrian activity, as "opportunities for social interaction only occur once the car has been parked" (Carmona et al., 2003, p. 168). It is undeniable that a space is more public when there is a larger number of users present (Carmona et al., 2003; Jacobs, 1961; Lynch, 1984; Miller, 2007; Montgomery, 1998; Whyte, 1988). For pedestrians, the connection between different places is important as successful public spaces are often properly integrated within local movement systems (Carmona et al., 2003). Although attempts were also made in this work to measure general user density, pedestrian flows, on the other hand, are more easily measurable. The literature regarding pedestrian level of service is mostly targeted towards streets and other linear elements suited for pedestrian linkage (FHWA, 1998; Polus et al., 1983; Pushkarev & Zupan, 1975; Singh & Jain, 2011). Also, pedestrian flows in these space types have a greater dependency on the adequacy of its physical connection with the surrounding spaces, amenities, and services. According to Singh and Jain (2011) pedestrian flow evaluation can take two distinct forms. Roadway Characteristics Based Methods are based on the characteristics of walkways or pedestrian facilities, and are related to pedestrian perceptions and comfort levels. On the other hand, HCM are equivalent to pedestrian flow and are based on pedestrian flow rate and available sidewalk space in order to calculate variables such as speed, density, and volume. Pushkarev and Zupan (1975) and Polus et al. (1983) developed methods for classifying levels of service for walking, beginning with an open and ending with an unimpeded flow, to jammed flow, when movement is virtually inexistent. For the purpose of developing methods to combine safely pedestrian and cyclists in the American urban environment, the FHWA (1998) also presented a similar perspective on the subject. These different measurement standards are presented in Table 4.6.

Table 4.6 – Pedestrian levels of service (FHWA, 1998, p. 13; Pushkarev & Zupan, 1975, p.94; Polus et al., 1983, p.54)

FHWA			
Level of service	**Space (m^2/ped.)**	**Flow Rate (ped./min/m)**	**Speed (m/s)**
A	≥ 5.6	≤ 16	≥ 1.30
B	3.7 – 5.6	16 -23	1.27 – 1.30
C	2.2 – 3.7	23 - 33	1.22 – 1.27
D	1.4 – 2.2	33 - 49	1.14 – 1.22
E	0.6 – 1.4	49 – 82	0.76 – 1.14
F	≤ 0.6	Var.	≤ 0 .76

Pushkarev & Zupan		
Quality of flow	**Space (m^2/ped.)**	**Flow Rate (ped./min/m)**
Open	> 50	< 1.6
Unimpeded	12 – 50	1.6 – 6.5
Impeded	3.7 – 12	6.5 – 20
Constrained	2.2 – 3.7	20 – 33
Crowded	1.5 – 2.2	33 – 46
Congested	1.0 – 1.5	46 – 60
Jammed	0.2 – 1.0	60 - 82

Polus et al.			
Description of flow	**Level of service**	**Occupancy (m^2/ped.)**	**Flow Rate (ped./m/min)**
Free flow	A	≥ 1.67	0 – 40
Restricted, impeded, unstable flow	B	1.33 – 1.66	40 – 50
Dense flow	C1	0.80 – 1.33	50 – 75
	C2	0.50 – 0.80	75 - 95
Jammed flow	D	To be studied further	

The variable 'flow rate' is the most relevant for the study of pedestrian traffic in urban squares. The different classifications show varying results on the most unobstructed scenarios, particularly on Pushkarev and Zupan's classification, which considers a considerably low number of pedestrians to classify a flow as 'open', although the differences tend to dissolve as we get to the denser levels. Even if the ease of the flow of pedestrians is of a completely different level of importance for a public square than it is on streets, a steady pedestrian flow is important to generate a sense of security and the feeling that a space is properly used and connected to its overall surroundings. William Whyte studied the importance of pedestrian flows and its relation to the location choice of individuals, and although heavy pedestrian flows will not impede the natural congregation of standing pedestrians, they will most likely do it directly adjacent to it, as "when people stop to talk they will generally do so athwart one of the main traffic flows, as they do on streets" (Whyte, 1988, p. 107).

Urban squares work primarily as places of congregation and, usually, its large paved surfaces allow for much heavier pedestrian flows without severe consequences to its fluidity. As when into a square, pedestrians are faced with a relatively high number of opportunities for crossing its space, it is not feasible to measure this aspect based on path width. For the purpose of this study, spaces hosting pedestrian flows larger than 60 pedestrians/min, representing a symbolic value of one pedestrian/second, was understood as the minimum value to generate sufficient pedestrian footfall capable of attracting users. The flow rate difference scale between the extremes vary from four in FHWA and Polus et al.'s studies and forty in the case of Pushkarev and Zupan's study. As smaller values seemed the most appropriate, a scale difference of six was adopted for this study, meaning that spaces will less than 10

pedestrians/minute would be characterized by weak pedestrian traffic, with direct negative consequences on its vitality.

Overall, activity levels will increase when it is convenient for a large 'mass' of people to use the space in a variety of ways. Apparently, what most attracts people is other people (Lynch, 1984). However, it is also not acceptable to 'fill' the space in an excessive manner, meaning that activity schedules may be created in order to compartment behaviour in time, reducing for example peak loads. If different uses are promoted along the course of the day, this system of mutual support can, in fact, make wonders towards the promotion of a lively and thriving urban life. Although a public space should by itself be capable of generating sufficient user attraction, often additional measures must be found. The existence of entertainment activities is therefore viewed as a low-cost way to bring life to public spaces with the minimum of regulation (Shaftoe, 2008). As Montgomery (1995, p. 108) affirms, "if we are not to have active and animate cities, we might as well not bother". Although the presence of street vendors and entertainers can also have a positive effect on a space's vitality, is strongly related to a specific urban and cultural context, and therefore, even though measured, was not included as a publicness indicator. As entertainment activities are more likely to take place during the summer, this study assessed the frequency of scheduled activities and events. The value of one weekly event was selected as the edge value for a space with a strong component of scheduled activities and events. Spaces lacking these features were placed in a distinct category, and therefore, weaker classified.

For Carmona and Wunderlich (2013) one of the first indicators for the success of a space is the relation between the effectiveness of its movement corridors and the presence of attractors and amenities. In the absence of both, spaces are doomed to failure, as the inexistence of reasons to attract users will create a continuous degradation process, discouraging new users that happen to cross them. Public space must then be understood as a place of gathering and not of 'moving through'. When having fewer opportunities for interaction, development facing onto it will tend to be 'socially passive'. In direct opposition is 'socially active' development surrounding more 'social' spaces such as important squares and plazas. Being fundamentally the destination of static activity they provide, in theory, more opportunities for interaction and exchange.

Nevertheless, the potential for animation will exist even in the absence of effective movement corridors, if the potential for attraction of its amenities and features is high enough. Some places, like large shops, transit hubs, cultural and recreational facilities, government and public administration buildings, among others, are known to act as 'magnets', attracting people to a site. These activities usually generate the pedestrian flows that other smaller activities need for survival. This economic importance attributed to pedestrian activity explains why shops, for example, 'pay more' for sites with high pedestrian flows (Bentley et al., 1985, p. 29). In the lack of these attractors, a strong continuous 'background' use will most likely not be enough for the establishment of an animated space.

The relationship between physical and social space, form and function, has been one of the key issues in the postmodern reaction to modernism's apparent failure. This explains why the Modern movement, focused on functional separation of uses, failed in the creation of lively urban areas. New Urbanism and similar contemporary movements have since been promoting small, mixed land uses that generate a strong relationship between public space and the buildings around it (Figure 4.5).

Figure 4.5 – Active land use

Blank frontages are therefore an element to avoid (Carmona et al., 2003; Carmona & Wunderlich, 2013; Gehl, 2001; Jacobs & Appleyard, 1987; Németh, 2009; Tibbalds, 2001). Although an edge fully filled with different activities and functions that spill into the space is the ideal scenario, the physical configuration of buildings and its architectural features is what guide its connection and openness with the adjacent public space. As a complete absence of blank frontages is impracticable in the majority of spaces, a value of 10% appears to be a suitable boundary, over which its presence starts to be noticeable. It was considered that when blank frontages compose more than 50% of a space's edge, its dynamics and visual condition are irreversibly affected, ending up deterring users and activities to other spaces.

As public spaces provide benefits to all urban residents, the more who can access it, the better. Although public transport provision is preferable to achieve these means (Langstraat & Van Melik, 2013), in the lack of an efficient network, car parking availability can also provide similar benefits (Project for Public Spaces, 2000). When available on-site, this feature doubles as an additional source of pedestrian traffic, by turning these spaces into the start or end point of journeys in the vicinity. A threshold of 500m, usually defined as a 5 minute walk under normal human walking speeds, was selected as a differentiation indicator between spaces where the effect of the provision of public transport and/or parking vanishes.

The application of indicators has little to no meaning unless it is set against a scoring system whereby a case-study scheme can be evaluated in terms of its performance against an established benchmark system. Therefore, one of the first decisions was the assignment of numerical values to each one of the indicators, i.e., the space's features. In par with previous studies (Németh & Schmidt, 2007; Varna & Tiesdell, 2010), a growing scale for increased publicness was used, with three different levels: low, medium and high, represented through a scale of 1 to 3. The use of a more discriminated scale would have unnecessarily and excessively complicated the model. In summary, the selected indicators for the 'urban life' dimension are the ones that follow (Table 4.7). The indicators measuring the patterns of effective usage, in terms of user and use variety, duration of stays and spatial distribution, can only be assessed at the operation stage, as it is impossible to predict effectively user behaviour during project and design stage.

Table 4.7 – Publicness indicators in the urban life dimension

Urban life – project stage			
Indicator		Score	Description
a1	Operation hours	3	Open 24/7
		2	With operation schedule
		1	Sections permanently closed
a2	Use restriction	3	No intention to restrict uses
		2	Intention to restrict uses which collided with the owner's interests
		1	Severe use restriction
a7	Pedestrian flow	3	Heavy pedestrian flows expected
		2	Moderate pedestrian flows predicted
		1	Pedestrian flows not seen as relevant
a8	Events/ public animation	3	Strong focus on the condition for public events
		2	Create conditions for public events
		1	No focus for public events
a9	Blank frontages	3	Avoid the creation of blank frontage
		2	Treat blank frontages where possible
		1	Blank frontages explicitly created
a10	Public transport/ parking	3	Guarantee public transport/ parking on site
		2	Guarantee public transport/ parking at < 500m distance
		1	Guarantee public transport/ parking at > 500m distance
Urban life – operation stage			
a1	Operation hours	3	Open 24/7
		2	With operation schedule
		1	Sections permanently closed
a2	Use restriction	3	No visible restriction on uses
		2	1-2 restricted uses
		1	>2 restricted uses
a3	Use variety	3	> 4 visible uses at peak hours
		2	2-4 visible uses at peak hours
		1	< 1visible use at peak hours
a4	User type heterogeneity	3	< 25% of single user group
		2	25-75 % of single user group
		1	> 75% of single user group
a5	Spatial distribution	3	> 75% of used space at peak hours
		2	25-75% of used space at peak hours
		1	< 25% of used space at peak hours
a6	Stay times	3	> 50% of stays over 10 minutes at peak hours
		2	< 50% of stays over 10 minutes at peak hours
		1	No stays (movement only space)
a7	Pedestrian flow	3	> 60 pedestrians per minute at peak hours
		2	10 – 60 pedestrians per minute at peak hours
		1	< 10 pedestrians per minute at peak hours
a8	Events/ public animation	3	> 1 weekly scheduled event during Summer
		2	< 1 weekly scheduled event during Summer
		1	No scheduled events during Summer
a9	Blank frontages	3	< 10% of blank frontages
		2	10-50% of blank frontages
		1	> 50% of blank frontages
a10	Public transport/ parking	3	Public transport/ parking on site
		2	Public transport/ parking at < 500m distance
		1	Public transport/ parking at > 500m distance

4.3.2. PHYSICAL DESIGN

The movement in public spaces does not follow a random pattern and is therefore guided by a specific purpose and guidance, given by its objects and signs (Amin, 2008). Simply by inhabiting a space, it is possible for anyone to feel aware of the possibilities that surround them (Allen, 2006). Although the physical elements of urban spaces, such as the visual quality of the pavements, street furniture, and surrounding buildings, the maintenance of a human scale and a sense of enclosure and overall consistency and complementarity of the different elements can be categorized, the truth is that different types of spaces require distinct physical features.

The configuration of a space, decided since its conception stage, must take into consideration the different possibilities for use, in order to generate public life (Hillier, 2005; Southworth, 2013). As a result, physical design will always "impact decisively on the socio-economic potential of space, just as the socio-economic context should always inform the design solution adopted (Carmona & Wunderlich, 2013, p. 5). This means that through design and other intrinsic factors related to a given place's location, it is possible to influence how people use public spaces, how long individual activities last, and what activity types can develop. Only then, the 3 main dimensions, argued by Cervero and Kockelman (1997), can take place, known by the 3 D's of urban design: density, diversity, and design.

However, this potential can be limited immediately at the physical threshold of the space, through physical means. The formal justification for this physical segregation based on the imposition of access restrictions, with a tough impact on users' freedom and most basic liberty rights, has for long been 'security' (Marcuse, 2005; Németh & Hollander, 2010; Németh & Schmidt, 2007; Newman, 1972). However, the spaces that encourage greater freedom or liberty, i.e. the most open and accessible ones, are not always the most successful. As seen previously, in the basic contradiction between design strategies advocating human presence and strategies defending access restrictions, the decisive issue concerns people density. In this sense, Oscar Newman's (1972) controversial concept of defensible space was developed as a means of excluding threatening outsiders by designing places with surveillance in mind but also by barring entry to those who 'do not belong there'. As security measures are indeed felt most acutely when human movement is blocked (Savitch, 2008, in Németh & Hollander, 2010), if high levels of pedestrian activity are improbable, then defensible space design might be advantageous.

Gates are therefore used as a method of spatial space signification (Madanipour, 1999) to create 'crusty' (Flusty, 2001) pseudo-gated enclaves. In fact, "when limits to access exist in the form of gates or gatekeepers, the use of a space is severely restricted, the site privatized, and people's rights are limited" (Carr et al., 1992, p. 138). As successful public urban spaces work by balancing liberty with personal security, how far other developers, private or not, recognize that control in privately owned public spaces can be achieved without gates or overt forms of exclusion is not altogether clear (Allen, 2006). As a result, this study measured the incidence of these restriction measures over the number of gated entrances, whether it applies to all, none, or a number in between.

Beyond these universal access features, the design of urban public spaces take their toll with significant impact on three major groups: women, the elderly, and the physically disabled (Carr et al., 1992). While for women and the elderly, the major concerns revolve around concepts of security and vulnerability, for the disabled population, the issue seems even more delicate. Over the years, several authors suggested different concepts that attempt to link the physical characteristics of urban space and their effects over the population. 'Environmental pressure' (Lawton, 1974) and 'architectural disability' (Goldsmith, 2000) are just some of the terms that originated from studies addressing the impact that buildings, houses and poorly designed places have in everyday living. Burton and Mitchell (2006) developed, regarding this aspect the original concept of 'Streets For Life', i.e., streets where the local

community residents establish familiar bonds with the space, and consider it pleasurable even when they get older, giving them all the conditions to reside at their homes until the end of life. A well-designed urban space has then the potential to be 'therapeutic', establishing therefore another connection between urban design and psychological comfort.

Although providing wheelchair accessibility has been a goal of designers and space managers, the satisfaction of different needs are rarely addressed beyond that feature, limiting users' access and overall urban experience. All these studies formed the basis for the current focus on 'universal design' (Burton & Mitchell, 2006; Imrie & Hall, 2001; Imrie & Wells, 1993). This means the creation of environments and products that are usable by all without the need for adaptation or specialized solutions. Thus, these trends have been promoting a kind of urban design that seeks solutions for spaces of easy use by all citizens, regardless of their gender, age, or origin. Creation of soft slopes, elimination of steps or the creation of accessible alternative routes, clear way finding information, comfortable street furniture, elimination of obstacles in the pavement due to poor placement of elements or physical degradation of surfaces, are some of its most common measures. Accessibility and inclusiveness are the key issues behind this concept. The assessment of inclusive design features is therefore quantifiable from the intention to adopt it in a given project, either fully or partially, to the final outcome measureable through the actual existence of physical obstacles, usually taking the form of steps or uneven paved surfaces, and the suitability of accessible alternatives, particularly if they are easily discernible or not.

Other type of design features are also known to influence the freedom and universality of a space. Sadistic furniture, a term coined by Mike Davis (1992), is often associated with privately owned spaces (Langstraat & Van Melik, 2013) and used to deter certain behaviours. These measures of soft control (Loukaitou-Sideris & Banerjee, 1998) usually take the form of spikes on ledges (Whyte, 1988), the adoption of multiple armrests on benches to keep people from lying down, and sprinkler systems to douse 'undesirables' at random moments (Van Mélik et al., 2007). For Whyte (1980), most of the times, the undesirables are not themselves much of a problem, but the measures taken to combat them, while others hold a much more negative view of today's society arguing that, for example, "small parks will inevitably attract undesirables, front porches will attract noisy neighbours, grid street patterns will invite strangers into the neighbourhood, and benches in public space will encourage vagrants" (Carmona et al., 2003, p. 109), blaming therefore society and disregarding the role of good urban design.

Combining these thoughts with an overly risk-averse approach normally results in spaces where all activity is discouraged rather than avoid solely risk and anti-social behaviour. In fact, these hostile and anti-social environments paradoxically seem to encourage anti-social behaviour (ibid.). The ability to separate the rights to various valuable and congestible attributes of an urban space is the first step to good physical and institutional urban design (Webster, 2007). As public spaces can take different sizes and sadistic urban furniture can be applied in different extents, this study will define the concentration of these elements for each 1000 m^2. While their inexistence points to the optimal scenario, some might exist not by an explicit intention to restrict uses and deter users, but for a sole aesthetic purpose, leaving the issues of comfort to a secondary importance. As a result, the value of two elements per 1000 m^2 was defined as the threshold for maximum penalization.

Another element of predetermination of the space's possibilities comes from the suitability of its main circulation paths. In 'Responsive Environments: a manual for designers' Bentley et al. (1985) defended that the design of a place affects the choices people can make at many levels. Desire lines are one of the manifestations of this personalization (Shaftoe, 2008) and, although created by the free-will of pedestrians, are predetermined by designers. Although previously it was stated that the prediction of user behaviour is a complex endeavour, guessing which paths they will choose is easier than foreseeing what and how they will act. As publicness implies a strong knowledge regarding the possibilities a space

offers, the presence and intensity of desire lines is therefore a strong indicator of the space's adequacy and the designer's ability to predict users' needs.

Design has a greater potential than simply controlling behaviour and therefore keeping a space within a given state of operation. Tibbalds (2001) was one of the main defenders of a space's need for good design, in order to 'walk' against the on-going trend of public space deterioration and abandonment. For this matter, "looking after towns and cities also includes after-care – caring about litter, fly-posting, where cars are parked, street cleansing, maintaining paved surfaces, street furniture, building facades, and caring for trees and planting" (ibid., p. 7). Proper upkeep is also implicit as a valid method for maintaining the safety of a public space (Carmona & De Magalhães, 2006; Montgomery, 1998). It is not by chance that visual aesthetics dominate urban design thinking and therefore public space development strategies, as what is seen is often the strongest sensual stimulation (Shaftoe, 2008). With this in consideration, local governments and other parties involved in the development and management of public space became aware and responded to public preference by redesigning public spaces (Van Mélik et al., 2007). Good urban design was also in the prime interest of land owners, developers and financiers, as well as consumers since it raised the quality and value not only of the space itself but the surrounding areas (Webster, 2007). Also, this focus on redesign focused on the assumption that the new is better than the old. But the new is justifiable only if it is better than what exists (Jacobs & Appleyard, 1987).

In any redesign project, street furniture and paving materials must be chosen for their robust, enduring qualities, but they must also be looked after. A brick paved street must not be patched with asphalt and broken slabs of pavement materials must be replaced by new ones. Knocked-down bollards should be quickly re-erected and missing street furniture ought to be readily replaced. Graffiti must be quickly cleaned off or painted out (Tibbalds, 2001, p.74), and green elements must show no signs of neglect. Hence, a stronger or weaker concern for the durability and maintenance of the adopted materials for a site will result in a more contained or widespread physical degradation, which can be promptly measurable by a simple visual assessment of the site.

As for most people sight is the dominant sense, most of the information we handle is channelled through our eyes, meaning that visual richness, i.e. the presence of visual contrasts, is of great importance to the quality of a space (Bentley et al., 1985). Many urban design experts defend a cause-effect relationship between good design and certain positive behavioural outcomes. As Ford (2000, p.199, apud Carmona et al., 2003, p. 109) argues, writers such as Jane Jacobs and William Whyte believed that "good streets, sidewalks, parks and other public spaces bring out the best in human nature and provide the settings for a civil and courteous society. Everything will be fine if we can just get the design right". However, as spaces around the world are becoming increasingly similar, making it difficult sometimes to distinguish spaces across different cities or even within the same urban area, (Carmona, 2010b; Madanipour, 1996; Sorkin, 1992), urban design has become reduced to a mere packaging (Figure 4.6). Although original design schemes are often positive additions to the public realm, one has to be careful to avoid unnecessarily expensive legacies which can limit the effect of regeneration efforts authorities put themselves into (Evans, 2005). As a result, a focus on a single material and/or texture, particularly for the selection of site's paving material is a lot less desirable than having a higher variety of materials, particularly when combined with green surfaces and other planting.

Figure 4.6 – Sterile and homogenised public space, Porto, Portugal

The design of a place can also affect how easily people can understand what opportunities it offers, a quality baptized by Bentley et al. (1985) as 'legibility'. Although it may be possible to understand a place solely at an aesthetic level or by its use patterns, the fact is that a place's potential is only perceived at its optimum level when the awareness of form and function complement each other. Dense shrubbery and uneven topography are major natural inhibitors of full space legibility. Hidden corners and the areas that result may pose a safety risk particularly during darker evening periods. The quality of legibility is also hard to achieve in covered, enclosed spaces such as shopping malls and subways, explaining why designers resort to extensive signage, often both confusing and intrusive (Tibbalds, 2001, p. 63). This study assessed the extent to which legibility is perceived in a given space, particularly whether the entire site is visible from all inner points, if there are locations on where the entire site is visible, or if its physical structure is illegible from any point within.

Although the idea that legibility is an important indicator of the quality of urban spaces, and therefore, good urban design, Taylor (2009) defends that this concept is generally overrated. For him, in the process of perceiving and experiencing urban environments, our experience is speckled with thoughts and ideas about the surrounding objects and places, usually based on aesthetic concepts. Cities like Venice or Amsterdam, despite of their relative illegibility, possess interesting aesthetic qualities, making them targets for large numbers of people to visit and experience (ibid.). Also, and although legibility is necessary for the development of meaning, it is not sufficient, as a deeper connection with the space comes from a number of features, particularly the already mentioned possibilities for use (Carr et al., 1992). Besides the measurement of this 'inner' legibility, the visual connection to the surroundings, how the space overlooks and is overlooked from other adjacent locations, is also of great important to the quality of a space and its publicness. Although it depends not only on the physical configuration of the site itself but also how the surrounding streets and buildings relate to it, a visual connection in all four cardinal directions is preferable, maximizing the site's openness and the potential to attract a higher number of users. The less visual connection to the outside, the weaker its potential will be for a strong publicness.

Physical design influences not only how to access a site, but how users stay in it. With this in mind, comfort is a prerequisite of successful public spaces as the length of time people stay in a public space is a function and an indicator of its success (Carmona et al., 2003; Carr et al., 1992). Here, simple aspects such as the provision of enough places to sit can make wonders regarding the vitality of a given place. Several authors regard the importance of seating to a successful public space (Carr et al., 1992; Francis,

1987; Németh, 2009; Project for Public Spaces, 2000; Varna & Tiesdell, 2010), while others go further and present it as the most important feature (Shaftoe, 2008). This last assumption seems a bit exaggerated, as in spaces with a high number of users, it would be unfeasible to provide seating in an adequate number. Nevertheless, and as Gehl (2010) points out, vacant seats enhance the impression of physical and psychological comfort on the benches. People want to sit near other people, but not too close. Hence, Whyte (1980, pp. 27-28) noted that the most popular, and more successful, plazas tend to have considerably more sitting space than the less-used ones, and therefore "the most attractive fountains, the most striking designs, cannot induce people to come and sit if there is no place to sit".

Seating characteristics are also related to the way people feel in public spaces as "generally people sitting down like to observe rather than be observed, so seats without a wall of other barrier behind them are likely to be underused" (Shaftoe, 2008, p. 94). Seating should therefore be designed so as to offer social and psychological comfort (Carr et al., 1992). The orientation and dimensions of seating arrangements should permit eye contact, facial and voice recognition to facilitate interpersonal contact and communication amongst users. Orienting seating to the main pedestrian flows is an often used strategy to maximize its usage. Fixed seating is less flexible, and generally less comfortable, than movable seating, as it constrains the formation of social groupings and reduces the possibility of positioning to take advantage of the sun, shade and other microclimatic factors (Carmona & Wunderlich, 2013). Seating flexibility is also related to basic users' needs, as they may include the ability to walk into a space and find a comfortable place to sit and relax without being hassled (Francis, 2003, p. 4). Different people want to sit in different ways (Figure 4.7), and given enough choice, each will seek out the setting best suited to him or her (Cooper-Marcus & Francis, 1998).

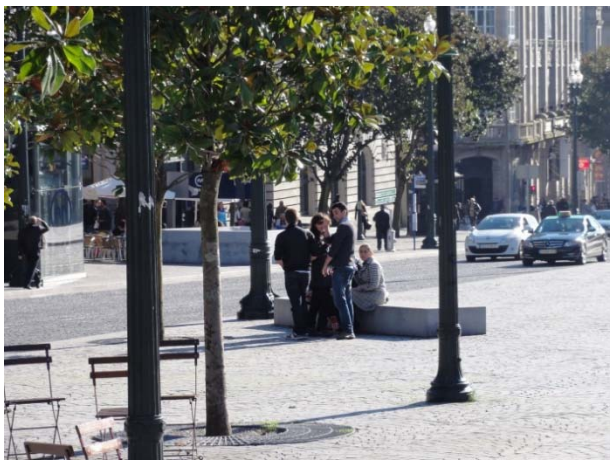


Figure 4.7 – Distinct seating configurations in the same space

As seating being a complex element of a public space, this study assessed three distinct features. First, regarding its availability, a stronger focus on seating provision will prove to be more useful as there will be more seating available and for longer periods. A space that fails to provide sufficient seating for its users will demonstrate a lack of prediction power by its designers and promoters. Seating flexibility will be measured by its moveable nature and its orientation to the main activity points. Finally, seating comfort will be evaluated through the presence or not of backrests, and whether or not users need to rely on improvised seating that often lacks the ideal comfort conditions. A space lacking any sort of formal seating locations will, as expected, fail in all of these three conditions.

Beyond the provision of suitable comfort conditions, users must feel engaged with the space, in order to extend its appeal to a greater number of users. Modification, one of Kevin Lynch's five dimensions of control is regarded as a main aspect of any successful public space. Built environments created by professionals often produce on its users the need to modify and personalize their surroundings (Shaftoe, 2008). This need for discovery and desire of new experiences, rooting a physical and psychological engagement, can be achieved by particular design features, particularly by creating possibilities for the viewing of public art, the manipulation of elements such as sculpture, play equipment, skating opportunities, to even stumbling upon unexpected places (Carmona et al., 2003; Carmona & Wunderlich, 2013; Carr et al., 1992; Francis, 2003; Van Mélik et al., 2007; Varna & Tiesdell, 2010). Public art, particularly, can indeed have an important role in the creation of cultural and social significance, reinforcing space identity and allowing for its natural appropriation, and matching citizen's expectations to a certain quality of life standard, beyond the obvious financial and institutional support to artists as a consequence of increased investment in their work (Brandão, 2002).

At the time to evaluate the capacity of change, it is essential to determine the degree to which a site is modifiable or adaptable Two important questions are suggested by Lynch (1984). First, how 'manipulable' is the site? Second, how reversible are the changes once they are made? These changes can occur in many different ways as, for example, elements may be added either temporarily or permanently. Still, and although open, unarticulated spaces often allow for user changes and a diversity of activities, non-modifiable places are, in theory, ideal as overdesign may destroy the possibilities for modification and especially free personal use, an important quality to satisfy user's rights (Carr et al., 1992). In many urban settings, the downtown is the only place designed in a walkable scale, and as a result it needs to provide engagement for its users in order to support the commercial activities that take a considerable share of its economy (Crankshaw, 2009).

Also, and as some users may seek specific activities, hoping or being certain that they will be available, unique elements of these spaces, such as sculptures, water features or entertainers (Figure 4.8) will often result in increased social interaction (Carr et al., 1992; Montgomery, 1998). Whyte calls this 'triangulation', which provides a "linkage between people and prompting strangers to talk to each other" (Whyte, 1980, p. 94). Francis (2003) terms this feature as "fun" when mentioning the need to fill user desire for fun and excitement.

Figure 4.8 – Fountain inside shopping centre in Porto, Portugal

Still, public art cannot be seen as the solution to all problems, as good space design and the existence of activity are still key factors to promote. Sometimes, the chance to observe the different things that other people are doing, when moving through a given location, appears. This is understood as diversity. Challenge and mastery are qualities that stimulate interest and use and are human needs that explain much of the use of public places. People need to be able to test themselves, intellectually and physically, or they will lose interest. Similarly to the method used towards restrictive urban furniture, the presence of interactive elements will be measured by its density, being a space with over two elements per 1000m^2 considered a good example.

Environmental design has also been promoted for a long time to provide useful information regarding the creation of successful urban spaces (Francis, 1987) and is still considered today as a feature with key relevance in the context of public space comfort (Carmona et al., 2003). Thermal or climatic comfort is often neglected in urban design, and is necessary for prolonged stays and therefore a more vital space (Carmona et al., 2003; Carmona & Wunderlich, 2013; Cooper-Marcus et al., 1998; Crankshaw, 2009; Gehl, 2010; Németh, 2009; Nikolopoulou & Steemers, 2003; Shaftoe, 2008; Whyte, 1980, 1988). While traditional designs were inevitably well suited to the local climate, the recent homogenization tendencies have performed poorly regarding this matter. In response to both the local and global contexts, the need now is for 'climate sensitive design'.

As exposure to discomfort is not viewed negatively if the individual anticipates that it is temporary (Nikolopoulou & Steemers, 2003), the term adaptation is essential, otherwise users will not fixate in a given space. For Cooper-Marcus et al. (1998), the comfort threshold is set between 13 and 24 ºC and all spaces that commonly experience temperatures outside this range should properly address this issue. Sunlight penetration into urban places and into buildings helps to make them more pleasant places, especially due to the warmth it provides on colder days. Natural lighting makes an important contribution to the character and utility of public spaces, but also in creating interesting aesthetic dimensions, in the case of spaces that creatively take advantage of natural light. It also "encourages outdoor activities; reduces mould growth; improves health by providing the body with vitamin E; encourages plant growth; and provides a cheap, readily available source of energy for passive and active collection" (Carmona et al., 2003, p. 185). The level of sunlight penetration and intensity varies over the seasons, and while during the colder months of year users may seek its warmth, during hotter days the provision of efficient shadowing can be extremely important (Figure 4.9).

Figure 4.9 – Different user approaches towards the sun

As public spaces are mostly in outdoor locations, shadow is much harder to address adequately. This will also influence space's temperature, although this will also come as a consequence of the type of used materials, especially in terms of colour and reflectiveness, but also from the type and density of any natural vegetation. In very humid climates, external spaces may also need to be designed to encourage a greater through-flow of air, for cooling purposes, while in more arid climates fountains and water features in public spaces usually help cooling through the evaporation of water vapour (Carmona et al., 2003). Air quality is also an increasingly important concern in urban areas, as trees and other vegetation tend to filter out air pollution, and natural circulation helps to avoid flow stagnation. Consequently, a space that allows for effective protection from rain, and excessive sun and wind therefore addresses climatic comfort properly. Failing to provide protection from one or all of these natural elements will naturally decrease its performance.

While environmental design can contribute greatly to the achievement of a physical sense of comfort, psychological comfort might also be seen as a target. Relaxation is a more developed state of comfort and where the "body and mind are at ease" (Carr et al., 1992, p. 98). Grassed areas are understood as highly conductive to relaxation, play and social exchange, as "it is comfortable, flexible and allows users to position themselves to take advantage of microclimatic conditions" (Carmona & Wunderlich, 2013, p. 257). In addition to their immediate aesthetic qualities, the green elements in the city have a symbolic value. The presence of green elements "passes on a message about recreation, introspection, beauty, sustainability and the diversity of nature" (Gehl, 2010, p. 180). Water features, beyond its temperature regulation role and possibilities for user engagement, can also aid in the creation of a contrast to the surrounding urban context, and can even signify civilized urban space (Goss, 1993). For greenery to be enjoyed, therefore, there must clearly be places to sit, or lawns so positioned and designed as to be conductive to causal sitting (Cooper-Marcus and Francis, 1998, p.44). Spaces failing to include water features and trees will lose potential for the establishment of this connection.

All these features are important but are of little contribution to a vital aspect of urban operation. As seen before, increasing concerns about fear (Ellin, 2003; Oc & Tiesdell, 1998; Pain, 2001; Tibbalds, 2001), especially during evening periods, in par with 24-hour city strategies and a growing evening economy (Bromley et al., 2003; Carmona, 2010a; Montgomery, 1995) mark part of the debate surrounding public space in the contemporary city. As lighting in city space has a great impact on orientation, security and visual quality in the dark hours (Gehl, 2010, p. 180), effective lighting strategies must therefore be a part of any public space project. Encouraging night-time usage, optimizing investments and increasing safety levels (Németh, 2009), reduces the need for stricter access control schemes and additional measures of surveillance. This study will then assess whether lighting was considered an important aspect in a given public space project and addressed accordingly, and how was this reflected in the suitability of the existing lighting scheme. As there are difficulties in illuminating a large site evenly, 75% and 25% of the total area were selected as the target value for the identification of a properly lit and a poorly lit site, respectively.

During the day, good streets have well-defined edges and a quality of transparency or visibility at their edges (Montgomery, 1998). Fencing is one of the most common design features to define this edge. While fences were originally a feature of medieval cities and used for defence purposes (Ellin, 2003; Madanipour, 2003), in the current context these concerns are replaced by intentions to create 'oases' in the centre of busy cities. However, these features must be sought with moderation as too much 'isolation' from the outside urban bustle can obstruct visual access creating safety problems and discouraging use. Visual access and transparency must be then viewed against people's needs for privacy and intimacy. Hence, the inexistence of any fencing element is preferable to any sort of it, even if of low-height and

see-through. An opaque fencing element represents the strongest level of this forced enclosure, and therefore contributes negatively to a space's publicness level.

The physical design of a space composes not just the main, more easily identifiable features of a space, but is also responsible for the smaller details that can have a great deal of importance in how a space is used. A public space is indeed successful when a variety of users uses it in a number of ways, for distinct activities and purposes. The consumption of food and drink in a space, although being a strong indicator of its comfort and its pleasantness, must be supported by an adequate network of litterbins and equivalent receptacles, as well as their regular emptying. Public spaces can rapidly appear unappealing if they are sprinkled with discarded food and drink containers and overflowing or damaged bins (Shaftoe, 2008). A concern for the placement of these elements, near the main expected focus of activity and not just the space's main entrances and exits, will minimize possible issues in the future. Only with the evaluation of the site's main activity locations, the adequacy of these elements' location can be determined.

The provision of public toilets in public spaces, although formerly found in greater number and understood by some authors as an important feature of a space, particularly for the attraction of elderly users (Carmona & Wunderlich, 2013; Carr et al., 1992), has been kept apart from recent projects due to vandalism concerns, frictions in the definition of adequate maintenance and cleaning schemes (Whyte, 1988), and as a 'symbolic restriction' to discourage undesirable activities (Loukaitou-Sideris & Banerjee, 1998). Drinking fountains are also another of the elements new public spaces are starting to miss. Often these are not included due to sheer disregard of its importance by designers and project clients or recognition of the existence of similar amenities in the vicinity. The result can take a number of distinct ways. Either these elements are indeed found on-site, in nearby locations or subject to payment, or not available at all.

The delivery of bicycle parking facilities is also important in an age where the benefits of sustainable mobility and physical exercise are widely proven (Carmona & Wunderlich, 2013; Project for Public Spaces, 2000). Similarly to the provision of formal seating locations, the goal is the availability of bicycle parking at all times. However, in the majority of our cities, the car is still king. As cities developed as 'machines of traffic' (Berman, 1983), public spaces became chocked by this vehicular flow (Tibbalds, 2001) and fear of traffic appeared as an important psychological barrier, (Carmona, 2010a) deterring some of the public away from public spaces. What is most apparent is the "failure to include the separation and movement of traffic as an important design consideration in the interest of a healthy and enjoyable public life" (Carr et al., 1992, p. 31). Carmona et al. (2003, p. 166), also defended this need for public space to stimulate relaxation as, "in urban settings, natural elements and separation from vehicular traffic help accentuate the contrast with the immediate surroundings and make it easier to be relaxed". Protection from traffic is therefore understood as a quality criteria (Gehl, 2010). When this separation can be achieved by simple level changes or physical distance, traffic bollards are used to create this physical separation and therefore induce the intended safety. Designed and applied with different intentions in mind, as some spaces are planned with removable bollards to allow the occasional presence of vehicles, such as for maintenance and emergency purposes, in the end this will be reflected in different frequencies of vehicle invasion, always with the mind-set that a full prohibition is preferable. In summary, the main features to assess in the 'physical design' dimension are the ones that follow (Table 4.8).

Table 4.8 - Publicness indicators in the physical design dimension

Physical design – project stage			
Indicator		Score	Description
b1	Physical access restriction	3	Guarantee full physical access
		2	Create one or more gated entrance
		1	Gate all entrances
b2	Inclusive design	3	Adopt fully inclusive design
		2	Provide alternatives to bypass physical obstacles
		1	Inability to provide full inclusive design
b3	Design to imply use	3	No restrictive urban elements
		2	Include 1 – 2 restrictive urban elements per 1000 m^2
		1	Include > 2 restrictive urban elements per 1000 m^2
b4	Hard surface adequacy	3	Adequate all paved surface to main pedestrian paths
		2	Inability to adequate all paved surfaces to main pedestrian paths
		1	No concern for placement of grassed areas
b5	Physical upkeep	3	Concern for the durability and maintenance of materials
		2	Moderate concern for the durability and maintenance of materials
		1	No concern regarding future physical upkeep
b6	Visual richness	3	Provide distinct materials and use of green elements
		2	Provide low variety of materials
		1	Focus on single material
b7	Legibility	3	Provide full visual legibility
		2	Moderate concern for the provision of space legibility
		1	No concern for the provision of space legibility
b8	Visual connection	3	Provide visual connection to and from all 4 cardinal directions
		2	Provide visual connection to and from 2-3 cardinal directions
		1	Provide visual connection to and from 1 cardinal direction
b9	Seating availability	3	Strong concern for seating provision
		2	Moderate concern for seating provision
		1	No concern for seating provision
b10	Seating flexibility	3	Moveable seating
		2	Fixed seating oriented to activity
		1	Fixed seating oriented away from activity
b11	Seating comfort	3	Seating with back rests
		2	Seating without back rests
		1	Improvised seating
b12	Interactive elements	3	Provide > 2 interactive elements per 1000 m^2
		2	Provide < 1 interactive elements per 1000 m^2
		1	No provision of interactive elements
b13	Climate comfort	3	Provide protection from rain/sun and wind
		2	Provide protection from rain/sun or wind
		1	No concern for protection from rain/sun and wind
b14	Green elements	3	Provide water features and trees
		2	Provide either water features or trees
		1	Do concern for water features or trees
b15	Lighting effectiveness	3	Concern for space's lighting effectiveness
		2	Lack of guarantee to properly illuminate site
		1	Inability to properly illuminate site
b16	Fencing delimitation	3	No fencing delimitation
		2	Provide see-through fencing
		1	Provide opaque fencing
b17	Trash receptacles	3	Concern for trash receptacles location and availability
		2	Concern for trash receptacles availability
		1	No concern for trash receptacles
b18	Other amenities (toilets, drinking fountains)	3	Provide other amenities
		2	Recognize the existence of other amenities nearby
		1	No concern for other amenities
b19	Bicycle parking	3	Concern for bicycle parking facilities location and availability
		2	Concern for bicycle parking facilities availability
		1	No concern for bicycle parking facilities
b20	Traffic isolation	3	Isolate space from vehicles
		2	Provide occasional access to vehicles
		1	No intention to isolate space from vehicles

Physical design – operation stage			
Indicator		Score	Description
b1	Physical access restriction	3	No physical access restrictions
		2	Existence of some restricted entrances
		1	All entrances restricted
b2	Inclusive design	3	Inclusive design fully adopted
		2	Alternatives to bypass obstacles, even if not clearly visible
		1	Areas separated by steps or stairs
b3	Design to imply use	3	No restrictive urban elements
		2	1 – 2 restrictive urban elements per 1000 m^2
		1	> 2 restrictive urban elements per 1000 m^2
b4	Hard surface adequacy	3	No visible desire lines
		2	Weakly defined desire lines
		1	Strongly defined desire lines
b5	Physical upkeep	3	No visible signs of degradation
		2	Few elements of degradation
		1	Widespread degradation
b6	Visual richness	3	Distinct materials and use of green elements
		2	Low variety of materials
		1	Focus on single material
b7	Legibility	3	Easily understandable physical structure
		2	Physical structure understood from certain locations
		1	Illegible physical structure from any point
b8	Visual connection	3	Visual connection to and from all 4 cardinal directions
		2	Visual connection to and from 2-3 cardinal directions
		1	Visual connection to and from 1 cardinal direction
b9	Seating availability	3	Seating available at all times
		2	Seating available most of the times
		1	Seating full at all times
b10	Seating flexibility	3	Moveable seating
		2	Fixed seating oriented to activity
		1	Fixed seating oriented away from activity
b11	Seating comfort	3	Seating with back rests
		2	Seating without back rests
		1	Improvised seating
b12	Interactive elements	3	> 2 interactive elements per 1000 m^2
		2	< 1 interactive elements per 1000 m^2
		1	No interactive elements
b13	Climate comfort	3	Protection from rain/sun and wind
		2	Protection from rain/sun or wind
		1	No protection from rain/sun and wind
b14	Green el./ water	3	Presence of water features and trees
		2	Presence of either water features or trees
		1	No presence of water features or trees
b15	Lighting effectiveness	3	> 75% of area properly lit
		2	25-75% of area properly lit
		1	< 25% of area properly lit
b16	Fencing delimitation	3	No fencing delimitation
		2	See-through fencing
		1	Opaque fencing
b17	Trash receptacles	3	Trash receptacles available and in sufficient number
		2	Trash receptacles available and in insufficient number
		1	No trash receptacles
b18	Other amenities (toilets, drinking fountains)	3	Other amenities available on-site
		2	Other amenities available nearby or payment-dependant
		1	No other amenities available
b19	Bicycle parking	3	Available bicycle parking facilities
		2	Insufficient bicycle parking facilities
		1	No bicycle parking facilities
b20	Traffic isolation	3	No vehicle on site at any time
		2	Vehicles rarely on site
		1	Vehicles often on site

4.3.3. HUMAN CONNECTION

Whyte (1980) believed that the most sociable spaces were usually well located, preferably on busy routes and both physically and visually accessible, being part of the social urban space, with places to sit and with movable seats, enabling choice and the communication of character and personality. The establishment of a strong relationship between physical and social space in order to achieve high levels of urban vitality, creating a 'social space' (Lefebvre, 1991; Lynch, 1984), is clearly intertwined with the urban layout and its role over socio-economic processes. This 'human dimension' of public space (Carr et al., 1992), however, is often seen as a mental construction, meaning that it is created and valued differently by each individual (Carmona et al., 2003). Consequently, we can neither focus simply on the physical attributes, neither on the social relations that take place within it (Banerjee, 2001; Madanipour, 1996).

Punter (1991, in Montgomery, 1998) provided a framework to understand the interrelation between the physical setting and a place's activity and meaning by the use of the concept 'sense of place' (Figure 4.10). Montgomery followed the same three tiered division, although using different terms, 'place' instead of 'sense of place' and in a more comprehensive interpretation. As these authors show, we start to see the connections that arise between the three main dimensions at analysis, namely the human connection dimension, here understood as meaning, physical design, represented by the physical setting, and the space's daily dynamics, identified by its activity.

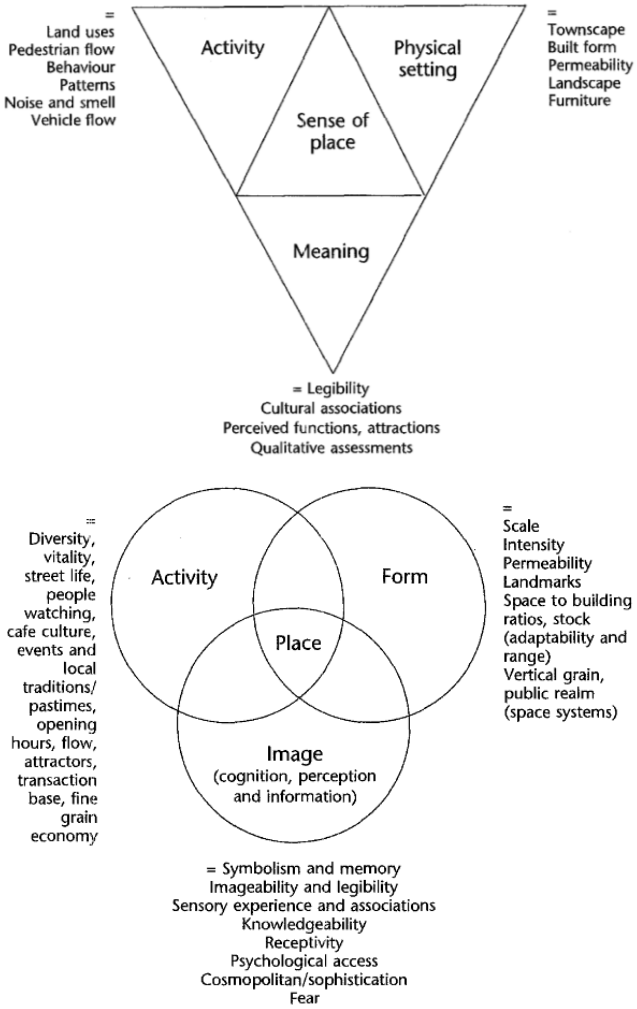


Figure 4.10 – Components of sense of place by Punter and Montgomery (Montgomery, 1998)

As issues of basic rights of access (Németh & Schmidt, 2007), personal freedom (Oc & Tiesdell, 1999) and freedom of action (Carmona et al., 2003; Carr et al., 1992; Flusty, 2001) formed an important part of the public space debate, the assessment of user's freedom feeling cannot be isolated from a space's publicness assessment. User surveys have the potential for collecting information that could not be assessed by simple observation of a space's user patterns. For this, the thresholds of 30 and 70% of positive responses were used to differentiate spaces where its users are embedded with a true feeling of freedom, or, on the other hand, if there is a 'higher force' inhibiting it. These target values will be used throughout the assessment of all indicators of the human connection dimension.

While previous studies included the aspect of space ownership as a valid publicness indicator (Langstraat & Van Melik, 2013; Németh & Schmidt, 2007; Varna & Tiesdell, 2010), this study went for a different approach. Despite the fact that the perception of space managers and developers is indeed faithful to the actual ownership scheme of the space, it is important to assess if user perceptions match them. This comparison has the potential to provide surprising results to how a particular society perceives its public spaces and if they see semi-public spaces as a threat to a vital public life.

If a space has indeed good intrinsic qualities, users will value it and will, hopefully, use it more often. Collective memory is often attributed to this spatial identity. Born from past experiences, individual and collective, it is expected that the longer people live in a place or close to it, meaning that they see it or pass through it every day, the greater relevance it will acquire to them. This stronger assiduity also has the potential to provide stronger psychological connections with the space, which will end up in more effective appropriation schemes and a higher esteem for the space, and result in a greater concern regarding the space's physical quality and attributes. Consequently, a high number of users who frequent a space in a daily basis, particularly in areas where the residential function is not as significant, can be understood as an additional factor for its success. This perception of identity, closely related to interactivity, forms the own notion of urban identity and the character of places, process that will be discussed ahead.

Still, when being in a space more or less frequently, and for either shorter or longer periods, good physical quality must be complemented with strong space vitality. For Bentley et al. (1985), people watching is one of the most common activities of intensely populated spaces. The frequently observed interest and enjoyment people derive from watching the passing scene, performances and formal activities, games or sports events, or even certain aesthetics features of spaces, form passive engagement (Carr et al., 1992). This is considered as a pleasure in itself as it "allows people to fantasize about the lives of others" (Stevens, 2007, p. 47). Happening mostly at places that offer a sense of refuge as well as a general prospect of the scene, and although apparently leading to a sense of relaxation, it differs in that it involves the need for an encounter with the setting, even though without becoming actively involved, hence the use of the term 'passive'.

These features are also a consequence of the freedom of action in public space (Carr et al., 1992, p. 152), as it involves "the ability to carry out the activities that one desires, to use a place as one wishes but with the recognition that a public space is a shared space". Public freedom and individual freedom share a relation of mutual dependence, as the first one is both the result and the cause of the latter (Mensch, 2007). As a result, users will know if a given space meets their expectations regarding use. They can rather feel that a space has an overly reduced usage to match its potential, an excessive usage with a negative effect on its qualities, both physical and social, or an actual use that is not suited to its features or context, either social or urban.

The space's physical upkeep condition can also be prone to different interpretations, although the negative effects that can result from poor physical maintenance can be easily perceptible. While

elements such as graffiti might be a nuisance to some users, others, particularly the younger sectors of the population, might see it as a natural expression of urban culture and a valuable asset to the space's symbolic value. Others might value more dearly the aspects of space overall cleanliness or the upkeep of its green elements. The assessment of user's opinion regarding upkeep can deliver a valuable perspective regarding the effectiveness of a space's maintenance regime to its users' expectations.

Safety is another element strongly imbedded in user's expectations and essential for a safe and carefree usage of a space. Whereas during the day, fewer issues can pose, considered that usage is sufficient to induce natural surveillance, night time safety is often one of the most important concerns among public space users (Tibbalds, 2001). As seen before, different approaches towards safety are usually of a great influence over public space briefs. When safety is not, from the starting point, understood as a valid concern, a path is created to a widespread feeling of unsafety and distrust among a public space's users, which can only be determined through a direct assessment of their opinion.

In fact, reduced crime levels and the associated sense of security are critical for the level of perceived comfort in a public space, a basic need for public space users. Although research seeks to find the factors needed for the provision of comfort, and particularly psychological comfort in public spaces, not all spaces should be designed nor managed with this goal in mind. In fact, some people actually enjoy the liveliness and the urban bustle and search engagement with other people, meaning that the sites should also accommodate these types of city dwellers. Undeniably, much has been said regarding physical features that can influence users' comfort in a space. Attempts to allow the presence of natural elements, particularly water and green elements, even in indoor environments, are widely used (Figure 4.11). Other physical features such as the provision of comfortable seating and shelter from the sun are some of the elements found across the literature (Carr et al., 1992; Francis, 1987; Project for Public Spaces, 2000; Shaftoe, 2008; Whyte, 1980). When selecting a public space project's physical and functional features, comfort can be dealt with different levels of importance, ranging from being a quintessential condition, to being a secondary goal, or, in some extreme scenarios, irrelevant to its success. Comparing these intentions with the true opinion of its users can provide important insights towards the effectiveness of the adopted strategy.

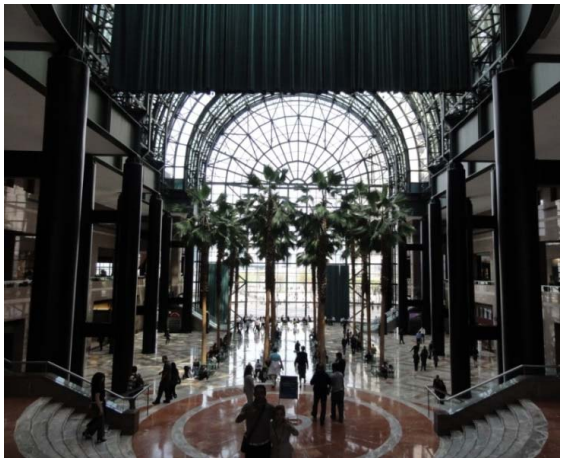


Figure 4.11 – World Financial Centre Winter Garden, New York

In large communities, where residents are unknown to each other and are unable to identify others with similar interests or backgrounds, private behaviour is encouraged and people tend to retreat to private spaces. With this heterogeneity in hand, how to balance this conflict and develop more socially

integrative public space? One of public space's most important features is the fact that it brings together people who are strangers to each other, into an intimate and private social sense. In fact, although simply people watching or more direct contact might be one of the most basic representations of personal freedom (Montgomery, 1998), individual freedom in public spaces can also be materialized in the desire for new spectacles and pleasurable experiences. Discovery, a commonly used term for these aspirations, depends on variety and change, as the discussion in the previous chapter has already shown. By representing a break from the everyday routine and the expected, discovery usually requires "some sense of unpredictability and (real or imagined) danger" (Carmona et al., 2003, p. 168).

Using an open space may be either the result of a deliberate plan or idea, or it may be the result of accidental and serendipitous choices. For discovery to continue to be part of someone's experience of familiar places, it would be essential to have changing physical qualities and changing human activity as well. Although design can contribute to the first part, activity programming promoted by the management closes the process. Hence, a place designed to foster interaction and user experience will hopefully result in a stronger user satisfaction and surprise, than a space designed for the sole purpose of being a 'quality site', without a valid concern for the satisfaction of these needs.

Spaces that might appear dull at first sight can have a strong symbolic significance for its users, due to the social relations and rituals that take place there (Carr et al., 1992; Montgomery, 1995). Bentley et al. (1985) identified the interpretation people give to a place as 'visual appropriateness'. According to Lynch (1984), an individual's knowledge of a city is a direct consequence of the 'imageability' of the urban environment. Related to concepts such as familiarity and place identity, imageability can be easily understood as the extent to where the components of the environment make a strong impression on the individual, making a place distinct, recognizable, and memorable. Jacobs and Appleyard, in their 1987 'Urban Design Manifesto' also advocated, as one of the main goals for urban life, the promotion of authenticity and meaning. Therefore, the symbolic meaning of any city element is the symbolic value attached to it (Moughtin, 2003).

In fact, Von Meiss (1990, p.162, in Carmona et al., 2003, p. 98) had already identified three design strategies that allow public spaces to foment a sense of identity for people and groups:

- Creation of an environment responsive to, and based on, designers' deep understanding of the values and behaviour of the people and groups concerned, and the environmental features crucial to their identity;
- Participation of future users in the design of their environment;
- Creation of environments that allow modification and adaptation by its users.

Although for Zukin (1995), physical space has a symbolic meaning for the basic reason that it exists, this 'sense of being there' (Cullen, 1961), achievable through lively streets and neighbourhoods (Jacobs, 1961), is what makes a space distinguishable from others (Lynch, 1960), and is essential for users' "wellbeing and feelings of safety, security and orientation, and a remedy against feelings of alienation and estrangement" (Aravot, 2002, p. 202). By introducing memory and history, meanings become entangled with public spaces and their ability to appeal to the collective, and to the individual as members of the social collective (Arendt, 1958), forming the so-called 'sense of place' or 'genius of place' (genius loci).

Public spaces change according to their social, cultural, economic and symbolic functions, and, perhaps more importantly, on the meanings the different publics bring to them (Bentley et al., 1985; Lees, 1998; Relph, 2007), being 'shareable' not only between current generations, but also with past and future ones (Madanipour, 2003). Meanings can connect to the personal history or culture of the space's users, by their habits or personal lives, fostered by user participation in the design and management processes of

the spaces or even in the organization of local events, by their biological or psychological affinities, the attachment of a symbolic patriotic or sacred value (Figure 4.12), or even by the attraction by other 'universes' (Alves, 2003). On the other hand, these meanings can also be a result of particular urban traits, such as the physical elements of a place, on the formal elements of certain individual or a given agglomeration of buildings and other structures, or even in the sheer monumentality of the space.

Figure 4.12 – A place with a strong symbolic value, World Trade Centre Memorial site (http://www.wtc.com/media/images/s/the-vision-national-9-11-memorial--and--museum, accessed on 1/10/2011)

For Sircus (2007, p. 127) "Place has meaning and memories. Place is not passive. Place is not good or bad because it's real vs. surrogate, authentic vs. pastiche. People enjoy both, whether its place created over centuries, or created instantly". Good intentions and understanding of the ways people seek meaning in public spaces will not automatically ensure that good public space design will occur. Although this may seem irrelevant to this study, to make a meaningful place requires a shared understanding among designers, managers and users (Carr et al., 1992). Therefore, the understanding of the phenomenon of place is essential to contribute positively through changes in existing spaces or in the process of the creation of new ones, by defining the limits of tolerability between space and use, and setting the framework for the future development of a 'sense of place'. On the other hand, developing a space without any concern for its possible symbolic value jeopardises it of becoming 'just another space'.

Besides the natural physical involvement in the spaces and the activities that take place within, due to users' sheer presence and attachment of values, another type of involvement can also be beneficial to public spaces (de Magalhães & Carmona, 2009; Francis, 1989; Tibbalds, 2001). User conflicts often arise from specific site-features, such as a lack of physical access, use incompatibilities, and feelings of fear and discrimination among particular user groups. However, conflicts may also result from intersecting meanings attached by users to the same space or by a lack of user involvement in the space's design, management and daily operation, with a strong impact on their expectations (Francis, 2003).

Appropriation and identity can be easily defined by a proprietary interest over space. Let it be an individual or a group searching for control over a space, for example, in community open spaces it is usual to see local people taking over a vacant lot, developing it as a passive park or community garden and taking responsibility for it. As these appropriation schemes usually affect only small portions of the space, threats to the overall freedom of the remaining users of the space are usually out of the picture. It is then a "product of reasonable rules, adequate choices, opportunities for use, and designs that support the needs of users" (Carr et al., 1992, p. 158). Although this section does not intend to measure actual

user involvement in the space's operation, as this will be left for the analysis of the management dimension, the sheer user intention of wanting to be involved is a consequence of the establishment of a strong sense of place. User's civic responsibility can influence this aim, as there could be an actual intention towards other spaces that could be valued higher. The assessment of user's involvement intention will help to clarify that.

Public space, by giving society the chance to acquire a physical form leads to "an awareness of the self and others, and to an examination of the relationship between particular and general, personal and impersonal" (Madanipour, 2003, p. 236), and although society is essential to leverage social relationships, public life does not form out of thin air. In the end, the relationship between space and its users can be summed in an attempt to balance their needs and rights, in order to achieve an optimum point. Management often works as a scale between these two aspects. In summary, the assessment of publicness' human connection dimension will come from the assessment of the following indicators (Table 4.9).

Table 4.9 – Publicness indicators in the human connection dimension

Human dimension – project stage			
Indicator		Value	Description
c2	Space classification	3	Owners classify space as public
		2	Owners classify space as semi-public
		1	Owners classify space as private
c6	Safety concern	3	Physical features were decided for safety reasons
		2	Safety features were achieved due to other space features
		1	Safety issues were not considered relevant
c7	Comfort concern	3	Comfort seen as an essential feature
		2	Comfort seen as a secondary feature
		1	Comfort not seen as relevant
c8	Surprise	3	Foster interaction and user experience
		2	Foster the creation of a quality site
		1	Interaction and user experience was not seen as relevant
c9	Value attribution	3	Recognition of the importance of the space's value
		2	Recognition of the possibility of the creation of a valuable space
		1	Space value not seen as relevant

Human dimension – operation stage			
Indicator		Value	Description
c1	User freedom feeling	3	> 70 % of users feel free in the space
		2	30 – 70 % of users feel free in the space
		1	< 30 % of users feel free in the space
c2	User space classification	3	> 70 % classify space as public
		2	30 – 70 % classify space as public
		1	< 30 % classify space as public
c3	User assiduity	3	> 70 % are frequent users
		2	30 – 70 % are frequent users
		1	< 30 % are frequent users
c4	User usage opinion	3	> 70 % consider space properly used
		2	30 – 70 % consider space properly used
		1	< 30 % consider space properly used
c5	User overall opinion	3	> 70 % consider space properly maintained
		2	30 – 70 % consider space properly maintained
		1	< 30 % consider space properly maintained
c6	User safety opinion	3	> 70 % feel safe in the space at all times
		2	30 – 70 % feel safe in the space at all times
		1	< 30 % feel safe in the space at all times
c7	User comfort opinion	3	> 70 % consider space as comfortable
		2	30 – 70 % consider space as comfortable
		1	< 30 % consider space as comfortable
c8	User surprise opinion	3	> 70 % felt surprised by the space
		2	30 – 70 % felt surprised by the space
		1	< 30 % felt surprised by the space
c9	User value attribution	3	> 70 % consider space as valuable
		2	30 – 70 % consider space as valuable
		1	< 30 % consider space as valuable
c10	User involvement intention	3	> 70 % want to be more involved in the space's operation
		2	30 – 70 % want to be more involved in the space's operation
		1	< 30 % want to be more involved in the space's operation

4.3.4. MANAGEMENT

Although the debate has, for a long time, been centred on issues of design, access and control, and security, the discussion regarding the different management regimes that are shaping public space, the way they operate and the way they are seen by its users, justify 'management' as an isolated publicness dimension. Tibbalds (2001) was one of the first to mention the need for this separation as, although defending the need for good design to reverse the physical and social rundown of the public realm, recognized the vital role of public space management. For Webster (2007), the governance or ownership of public space should also be thought of as a design parameter, meaning that it should be aligned with form and function. In fact, all public spaces, even if well designed, inclusive and democratic, require some form of management to fulfil their roles effectively. Nevertheless, the definition of how a space is used and function it serves is commonly defined by its ownership (Marcuse, 2005). For that matter, Marcuse identified six legal degrees of ownership, ranging from totally private to totally public:

- public ownership, public function, public use (streets);
- public ownership, public function, administrative use (city hall);
- public ownership, public function, private use (space leased to commercial establishments);
- private ownership, public function, public use (airports, gated communities, zoning-bonus private plazas);
- private ownership, private function, public use (cafes);
- private ownership, private use (home).

Management usually targets how a place is cared for, daily, meaning that the security and surveillance scheme is one of the first items where a space's management profile can be affected. As mentioned in the previous chapter, regarding Lees' (1998) interpretation of the city as a 'combat zone', conflicts have always been a part of the urban scenario. Although the impact of surveillance schemes was already discussed in the previous chapter (Carmona & De Magalhães, 2006; Flusty, 2001; Lofland, 1989; Loukaitou-Sideris & Banerjee, 1998; Oc & Tiesdell, 1998, 1999; Van Mélik et al., 2007), it falls into direct management control and can provide important insights towards management's approach on a given space (Varna & Tiesdell, 2010).

The use of CCTV, security guards and/or police staff, popular to deal with social disorganization (Fyfe & Bannister, 1996), often provoke different impacts on the space's users. While CCTV can generate strong feelings of oppression and suspicion, as its 'invisible eye' can swiftly be pointed anywhere, it can also "extend the reach of the guardians of communal public spaces and can offer a protective ring of security until a problem can be sorted out by appropriate personnel" (Shaftoe, 2008, p. 23). Its introduction in public spaces depends crucially on a strategic alliance between the local state and local private capital (Fyfe & Bannister, 1996, p. 40), reason why CCTV is more commonly found in privately owned spaces. Staffed security, on the other hand, although representing a more human method, is also a more strict method of surveillance, with the already known negative effects on the space's users free will. While also associated with privately owned spaces, BID's can often extend their presence to publicly owned locations.

The level of concern of the space's managers towards these two different methods can be compared with what is actually currently found. Regarding CCTV surveillance, a decision was made to distinguish between the concealment level of these instruments, as it is not the number of elements that is essential, but how they present themselves to the 'outside viewer'. Nevertheless, the absence of CCTV cameras would always be preferred over a situation where its presence is hardly noticeable. For the evaluation of the presence of staffed security, a distinction was made between zero, one, or more than one element of security personnel.

Security concerns were always connected with the concept of the 24-hour city. Attempts to integrate the working day into an expanding evening and night-time economy appeared in the early 1990's targeting the economic renewal of rundown city centres (Bromley et al., 2003). Street cafés were viewed as an important asset for the success of these strategies as they provide places to sit, populate a district with activity, foster natural surveillance, create jobs and provide income for their owners (Crankshaw, 2009; Montgomery, 1998; Project for Public Spaces, 2000; Shaftoe, 2008; Whyte, 1980), creating additional attraction points for the overall space where they are installed. The sophistication and elegance of street cafés as places to meet people (Montgomery, 1997) makes them prone to attract population groups who might feel insecure in other locations, as is the case with women. Van Mélik et al. (2007) go even further in the praise of street cafés by stating their ability to meet all of Carr et al.'s five needs in public space.

Although these can be understood as 'third places' (Banerjee, 2001; Oldenburg, 1999) and an additional and unwanted method of space privatization (Atkinson, 2003; Németh, 2009), barring access to those who cannot afford to consume, if a balanced mix is achieved between these private areas and traditional public unrestricted space, then a positive contribution towards a space's vitality is achieved. As a result, its presence will be evaluated through the existence of food vending facilities and the percentage of total allocated space. An intention to include food-vending facilities and/or allocate a small section of the site for the installation of a street café is preferable to the absence of both. On the other end of the scale, if there is the intention to reserve a large portion of the site to a street café, users will be faced with scarce possibilities to freely occupy the space and use it as a true public space. For the transposition of this

indicator to the operation stage, the threshold of 25% was used, as it appears suited to both large spaces, where this value will hardly be reached, and smaller ones.

The return of the public can also be fostered by the inclusion of electronic networks into physical space. The visible increase of electronic equipment use, such as laptops, smartphones and tablets, in public spaces (Figure 4.13) may be related to an increase in the tendency for more people to linger in public and for people in mobile phones to linger more and for longer periods (Hampton et al., 2014). Indeed, these electronic networks became fundamental to society and the satisfaction of user needs (Mitchell 1996; Ellin, 2003). Wi-Fi networks allow us to stay permanently connected, wirelessly, with the world, at the touch of a finger.

Figure 4.13 – Use of new technologies in public spaces

As some interventions might have taken place at a time when the use of Wi-Fi was not widespread, it would seem unfair to consider it as a publicness indicator of the project stage. Also, and as Wi-Fi can be provided through the installation of appropriate equipment in adjacent buildings or easily concealed inside urban furniture, at a relatively reduced cost in comparison with the provision of other physical elements, it gains validity as a publicness indicator at the operation stage. Unrestricted networks, allowing for free and universal usage, are preferred. Occasionally, authorities resort to the use of paid access networks, in order to cover the infrastructure's operational costs, or transfer this responsibility to café outlets, representing an immediate reduction in publicness. The inexistence of Wi-Fi networks is the least preferred scenario.

Space animation is another element with the potential encourage people to visit, use and linger in public spaces (Montgomery, 1995). Here, animation is not understood as the natural animation that results from the natural peopling of space and the liveliness that results from it (Carmona et al., 2003; Jacobs, 1961; Oc & Tiesdell, 1999; Pugalis, 2009; Shaftoe, 2008), but the programmed events and activities that, promoted by the space's management authorities, have indeed a great potential of people attraction. The frequency of these events was already analysed in the 'urban life' dimension. However, it is the management approach towards them, during a space's operation stage, that matters in this section. Therefore, we can have a management authority actively searching for events and event partners, one that is only receptive to the establishment of partnerships but always with a passive attitude, or one who refuses the role of events as an important asset (Figure 4.14).

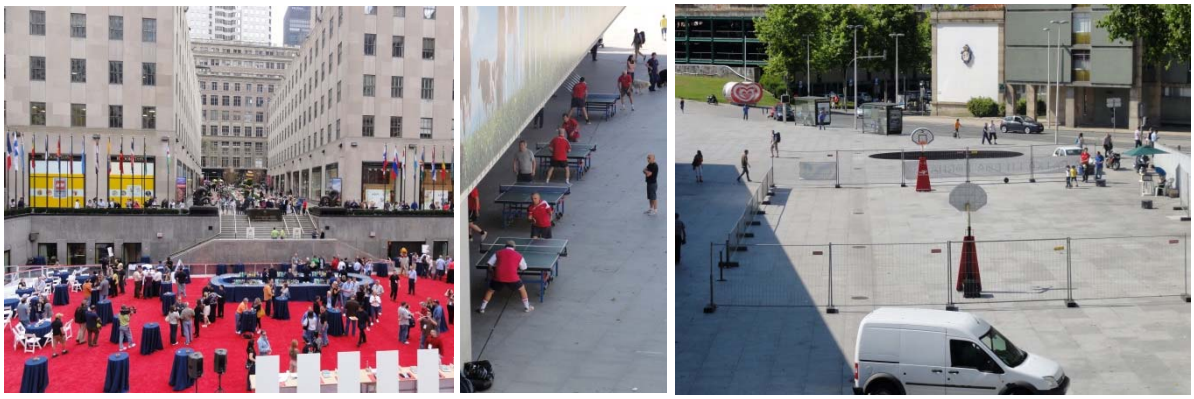


Figure 4.14 – Programmed events in public spaces

Regardless of a stronger or weaker concern towards the role of events, spaces must not be thought of and managed as 'islands'. In the same way that legibility refers to the ease to what the spatial structure of a place can be understood and navigated as a whole, public spaces should be created with a 'functional legibility' in mind. Since much has been said about the role of public space in regeneration strategies (Evans, 2003; Gospodini, 2002; Hannigan, 1998; Harvey, 1989; Marshall, 2000), a project included in a comprehensive urban strategy would, in theory, provide more benefits than a simple physical improvement process of the surrounding area. For instance, different physical features can be sought for each space, allowing a wider response to the needs of urban residents and avoiding the physical and visual homogenization that characterized space redevelopment projects around the world. On the other hand, if a project is developed in isolation with its surrounding area, an opportunity can be lost to the regeneration of its urban, social, and economic fabric.

Similarly to the premise adopted in its development stage, if a space is currently managed in network with others, either publicly or privately owned, physical features, such as green coverage, child play equipment or large paved surfaces for public events, can be distributed, and management strategies, such as event promotion and maintenance and surveillance routines, can be combined, with benefits for both space users and management authorities. When this is not possible, usually when different spaces are under the supervision of distinct management authorities, some aspects of nearby spaces can still be taken into consideration. This often takes the form of event planning and security coordination. When spaces are managed in isolation with other similar spaces in the vicinity, conflicts and phenomena of under and over use might appear.

Beyond regulation schemes, maintenance routines are essential as these ensure the 'fitness for purpose' of the physical components of public space (Carmona et al., 2008). Public spaces, and the infrastructure, equipment and facilities vested in them, need to be maintained in order to perform the functions that justify their existence. This concerns all aspects ranging from street furniture, litter, cleanliness, lighting, vegetation, physical operation of the facilities, but also the replacement of broken or vandalized parts. Proper maintenance is not only a sign of care as it is also considered by some (Varna & Tiesdell, 2010) as a sign of civility. As a lack of maintenance can precipitate a spiral of decline and, therefore, hamper all the efforts oriented for public space use, the management authorities', either public or private, attitude towards issues is essential to the success of the space. Still, all these last aspects are no more than good intentions if resources, either monetary or material, lack.

The research by Carmona and De Magalhães (2006), two authors specialized in the management of public space, identified four key sets of barriers to the improvement of its management schemes. First, they identified barriers to the better coordination of policies, programmes, and actions, mainly focusing

around the first two ones. Second, barriers to the better regulation of these spaces were discussed, largely due to the lack of coordination between regulatory regimes. Thirdly are relevant resource and investment barriers, born from an increasing number of involved agents and deregulation processes. Finally, insufficient investments in maintenance, and the creation of design conflicts were responsible for the creation of barriers with impact on the proper operation of these spaces.

Of all these, budgetary problems are the ones with the greater impact. When resources to undergo a physical renovation lack, maintenance of the existing elements represent the only strategy, meaning the impossibility to alter or suit spaces to the new urban dynamics. There is therefore the need for both on-going revenue funding, for day-to-day management tasks, but also significant capital funding from time to time when significant re-design and re-development is required. To avoid unnecessary expenditure, management authorities should always be aware of the space's issues, creating suitable schemes of space evaluation and promoting changes in its design or operation only if necessary (Cooper-Marcus & Francis, 1998).

During project, design, and construction stages, the management's ability and celerity to deal with any issue can be determinant to the fulfilment of the vision of the space's designer and client. When there is a widespread incapacity to overcome all issues that might appear important changes to the initial brief can result in the severing of important elements of the space's publicness. During operation stages, the same principles apply. While an immediate action towards issues is important to improve perceptions of care and concern for the space among its users, an inability to properly maintain the site will favour the development of the above mentioned 'spiral of decline', leading to the need for increased investment in the future for the necessary corrections.

The ability to effectively overcome all possible difficulties lead to a greater necessity for coordinating mechanisms to ensure that the agents in charge of those activities work towards the same goal. The question for Webster (2007) is how to best allocate property rights over the different types of space. It is not by chance that a re-occurring theme in public space management objectives was the desire to better engage external stakeholders (Carmona & De Magalhães, 2006; McInroy, 2000), dealing with their often conflicting demands and expectations. Webster (2007) agrees that as the more diverse the institutions of space provision, the greater the competition between suppliers and the more diverse, interesting, useable, sustainable and better governed will be the shared spaces of our cities. As a result, the frequency of communication between internal and external stakeholders, as well as between the space's management authority and the overall community is important to determine a project's and operation model's level of openness to the outside world. Lynch (1984) had already presented this strategy as a way to improve the fitness of the urban environment. A difference between inner and outer strategies can identify weaknesses in a space's management scheme, implying the existence of a particular set of agents who are not given enough voice in the process.

Although the fragmentation of responsibilities for elements of public space management and the lack of a true 'public space' focus makes it very difficult for users to engage with the process, by measures such as "basic consultation exercises, friends and community groups for particular open spaces or areas, community planning events and meetings, education initiatives, and formal community councils (area forums)" (Carmona & De Magalhães, 2006) public authorities usually see community involvement as essential. Community and user participation in the management of public space, creating an idea of "psychological ownership" (Eizenberg, 2012, p. 107) is known to increase a sense of attachment and ownership (Francis, 1989), the establishment of meaningful connections between people and places (Carr et al., 1992; McInroy, 2000) and the increase of social capital (Madanipour, 2004). These community organisations, by having a direct interest for the true quality of public spaces, do not take into consideration 'direct' economic concerns, meaning that the space's use value is effectively more

relevant than its exchange value. I used the term 'direct' for the simple fact that in real life situations, community interests regarding the quality of public space reflect a direct relationship with, for example, the value of their homes. However, particularly in contexts hard to manage, such as deprived neighbourhoods, it is sometimes seen as part of the problem. Still, this seems the most suitable strategy, since the space's control is put into the hands of its immediate users, those who have the stake and knowledge to make it function properly.

Even though the creation and improvement of public space has always had public welfare as its prime motivator (Carr et al., 1992, p. 10), the shaping of the contemporary society by demographic and cultural changes has, in the end, put new, original and often conflicting demands on urban spaces, which gave way to pressures over management systems. In summary, the selected indicators for the assessment of the management dimension of publicness are presented in the following table (Table 4.10).

Table 4.10 – Publicness indicators in the management dimension

Management – project stage			
Indicator		Score	Description
d1	CCTV	3	No intention for CCTV cameras
		2	Moderate concern for the provision of CCTV cameras
		1	Strong concern for the provision of CCTV cameras
d2	Staffed security	3	No security personnel
		2	Moderate concern for the provision of security personnel
		1	Strong concern for the provision of security personnel
d3	Regard to consumption	3	Include vending facilities and dedicate small section to consumption
		2	No intention to provide any consumption amenities
		1	Allocate a large section to consumption space
d6	Articulation with surrounding spaces	3	Project included in a comprehensive urban strategy
		2	Project articulated with new adjacent area
		1	Project developed in isolation with surrounding area
d7	Attitude towards issues	3	Issues were quickly dealt with
		2	Issues were dealt with
		1	Inability to overcome all issues
d8	Inner communication	3	Frequent communication among space agents
		2	Occasional communication among space agents
		1	No communication among space agents
d9	Outer communication	3	Frequent communication with outer agents
		2	Occasional communication with outer agents
		1	No communication with outer agents
d10	Community participation	3	Effective society participation
		2	Occasional society participation
		1	No society participation

Management – operation stage			
Indicator		Score	Description
d1	CCTV	3	No CCTV cameras
		2	Concealed CCTV cameras
		1	Easily visible CCTV cameras
d2	Staffed security	3	No security personnel
		2	1 element of security personnel
		1	> 1 element of security personnel
d3	Regard to consumption	3	Vending kiosk with/or < 25% of site dedicated to consumption
		2	Vending kiosk with/or >25% of site dedicated to consumption
		1	No vending kiosk nor any section dedicated to consumption
d4	Wi-Fi availability	3	Free Wi-Fi availability
		2	Restricted Wi-Fi availability
		1	No Wi-Fi availability
d5	Focus on space animation	3	Management is actively searching for events
		2	Management is open to event partners
		1	Management without interest for events
d6	Articulation with surrounding spaces	3	Space managed in network
		2	Some aspects of nearby spaces taken into consideration
		1	Space managed in isolation with surrounding spaces
d7	Attitude towards issues	3	Immediate action to solve operational issues
		2	Focus on smaller operational issues (cleanliness, maintenance)
		1	Inability to overcome daily operational issues
d8	Inner communication	3	Frequent communication among space agents
		2	Occasional communication among space agents
		1	No communication among space agents
d9	Outer communication	3	Frequent communication with outer agents
		2	Occasional communication with outer agents
		1	No communication with outer agents
d10	Community participation	3	On-going society participation
		2	Occasional society participation
		1	No society participation

4.4. THE PUBLICNESS EVALUATION MODEL

As already seen in the previous section, each indicator is associated with a quantitative scale from one to three. Still, in order to attribute the correct numeric value to each indicator a systematic method will require a number of different techniques. While for the analysis of the design/project stage, interviews with management authorities, project clients, designers and architects, as well as the evaluation of strategic documents, plans, and blueprints would provide all the required information, the analysis of the operation stage is characterized by a more complex process.

Post-occupancy evaluation, "a systematic evaluation of a designed and occupied setting from the perspective of those who use it" (Cooper-Marcus & Francis, 1998, p. 345) was the main technique for the evaluation of the 'urban life' and 'physical design' publicness dimensions. The indicators more closely related to the physical conditions of the site are not time dependent, and therefore, can be analysed on the first visit to the site. Nevertheless, their evaluation over a longer period would attest their consistency over time, avoiding the influence of unexpected physical degradation or malfunction of a particular space element. Other types of indicators, on the other hand, present a strong component of time dependency, mainly the ones related to the activity of the site. Its evaluation over a single day, from morning until evening, or at least during the entire opening hours of the space, when applicable, would prove insufficient and even biased. Specific weather conditions, special events, celebrations, or occurrences, specific of a given day, would provide an inaccurate representation of the reality, valuing

or devaluing unfairly a space. This also goes in account with the dynamic and ever transforming nature of public space, public life, and evidently, publicness. As a consequence, the different features relating to the activity of the site would require an extended period of analysis, demanding an evaluation over distinct periods of the day and the week, to evaluate the differences between day and night, peak and off-peak, workday and weekend periods. Although, as seen previously, there is not a consensus on whether to assess a space's usage during its peak or off-peak periods, both are needed in order to verify its suitability to the intricate nature of public life, which is always charged with unpredictability.

As this study will focus particularly in outdoor spaces, an analysis over different seasons is also needed, in order to evaluate the influence of different weather conditions, namely changes in temperature, rainfall, and solar exposition over usage patterns. Ideally, all four seasons should form the observation calendar. When not possible, the assessment should prioritize the season with the most adequate climatic features, thereby assessing the spaces under its greatest potential. However, this requires different considerations regarding the latitude of the city, and surely of its spaces. For instance, in Northern European countries the summer months present the most adequate conditions, where temperatures often stay above 20ºC during the day and rainfall is scarcer than the rest of the year. On the other hand, on the most southern areas of Europe, the summer months are characterized by higher temperatures, rising above 30ºC for several consecutive days, making solar exposition uncomfortable after a certain period of time. At these locations, the spring months are often the optimal periods for outdoor space usage. At night time, the situation can differ and the summer months can, in par with its northern counterparts, present higher levels of public space usage. Still, the extremes of the climatic patterns should be considered in the analysis, in order to demystify these assumptions. To complete this analysis, for each observation day, the temperature and overall weather conditions would be included in the assessment. At a lack of measurement equipment, this information would be collected from the official meteorological agencies responsible for weather forecast in the cities in question.

Each space would be evaluated over two ten minute periods in each hour, encompassing seven different time slots, from early morning to evening hours. More details regarding each of these assessment periods will be presented in the following chapter. Across these, each space would be analysed over two regular workdays and two weekend days, in order to eliminate any inconsistency created by an anomalous day. The average would then be made between the different pairs of days. This would be repeated for each of the yearly seasons in analysis. Although a more extended observation period would be preferred, the limited period and the decision to assess a total of eight spaces proved necessary to find a balance.

The evaluation of the space's dynamics through the post-occupancy evaluation technique can be achieved through a number of different methods. William Whyte (1980), on his analysis of New York plazas, used a series of time-lapse cameras, placed at strategic locations, in order to document the pedestrian dynamics of movement and space occupation. Although this would be an ideal instrument, as it provides minimum disturbance to the overall operation of the space, the lack of resources precludes its use. As a result, behavioural mapping (Project for Public Spaces, 2000) through structured observation was used in order to define each space's spatial usage patterns. Still photographs, when necessary, would complement this assessment. The total number of users, their gender, ethnicity, age, and gender would also be registered, although the last two ones could possess a certain degree of inaccuracy as they were 'guessed' by the research. Still, what is wanted is not a thorough user profile but rather the evaluation of the diversity of users.

According to Zeisel (1981) the selection of a vantage point is essential in order to determine the level of participation and intrusion of the observer. While some users can indeed change their behaviour due to the feeling of 'being watched', phenomena known as the Hawthorne effect, this effect can be minimized by spending enough time at the site so that other users are accustomed. The size of the space would also

influence the method of observation. In smaller spaces, a specific vantage point would be enough to apprehend the entire range of use dynamics. However, in larger sites, or in locations where the physical configuration inhibits the visualization of the entire space, the analysis through different vantage points is needed. The chosen observation points would also have to be unobtrusive in order to having minimum interference to the overall operation of the space. Therefore, the edges, unless other physical obstacles prove to exist, present the most obvious locations. For each observation period, a space chart containing all information regarding users' physical dispersion and activity was created, effectively compiling all required information (Figure 4.15).

To capture effectively the perspective of those who use these spaces, namely the assessment of the 'human connection' dimension, user surveys were needed. Although the evaluation of the public's feedback is avoided in the majority of the studies, several reasons can explain this fact. One of the first reasons might be related to the difficulty in correctly interpreting the space's most relevant features, i.e., what questions to be asked. These were already defined through the chosen publicness indicators. The assessment of the correct number of opinions to collect is also not easily acknowledged. In order to balance the validity of results with the effort needed to complete this task, fifty user surveys would form the framework for the assessment of this publicness dimension. As a result, a user survey composed on eleven closed-answer questions would also be a part of the Publicness Evaluation Model (Table 4.11). These surveys would take place in days not matching the observation periods, in order to avoid interference in the space's normal operation patterns. Also, by conducting them in an advanced stage of the assessment process, the evaluator would have a relative good knowledge of the space's usage patterns and therefore select an assessment period that would represent, with a fair accuracy, the space's average user, in terms of gender and age.

To complete the information required to operationalize the Publicness Evaluation Model, namely its 'management' dimension, interviews with management authorities, with a direct interest in the management and operation of each space, would be made. Contrary to the 'scripted' model defined for the user surveys, as these interviews would take place through a more informal talk, there was only the need to define particular target points, as the conversation would naturally evolve in order to get to the needed answers.

Table 4.11 – User survey model

USER SURVEYS	
How do you classify the space?	☐Public ☐Semi-public ☐Private
How often do you use this space?	☐Everyday ☐Occasionally (2-3x. week) ☐Rarely (< 1x week)
Have you come to this space for a particular reason or were you just passing by?	☐I came here for a particular reason ☐It is on my path
Do you feel safe in this space?	☐Always ☐Only during the way/ on certain occasions ☐Never
Do you feel comfortable in this space?	☐Yes, I feel comfortable ☐There are no places to rest ☐The space is wrongly used ☐Other reason
Do you feel the freedom to do what you want in this space?	☐Yes, completely ☐Up to a certain degree ☐I feel constrained
Do you consider the space clean and properly maintained?	☐Yes, always ☐Sometimes / could be better ☐Rarely
Do you consider the space to be properly used?	☐Yes ☐Could be more used ☐Could be less used ☐Could be used differently
Has this space surprised you, for any particular reason?	☐Yes ☐No
Do you give any particular value to this space? If it disappeared, would you be affected by it?	☐Yes ☐No
If you were given the opportunity to be more involved in the space's operation, such as proposing physical changes, events, etc., would you be interested in that?	☐Here and in more spaces ☐Only in spaces I would use more ☐No

Day:___/___/_____	**Observation Point:**				
Time frame	**___:___ to ___:___**				
Weather		**T: __ºC**			
Activity type	**Number users / Time spent**				
Passing by					
Strolling					
Standing					
Sitting					
Jogging					
Playing sports					
Eating/drinking					
Using Mobile					
Street vendors					
Street ent.[ners]					
Police officers					
Private guards					
USERS	Child	Teen	Young Ad	Mid-Age	Elderly
Male					
Female					
Gender	White	Black	Asian	Other	

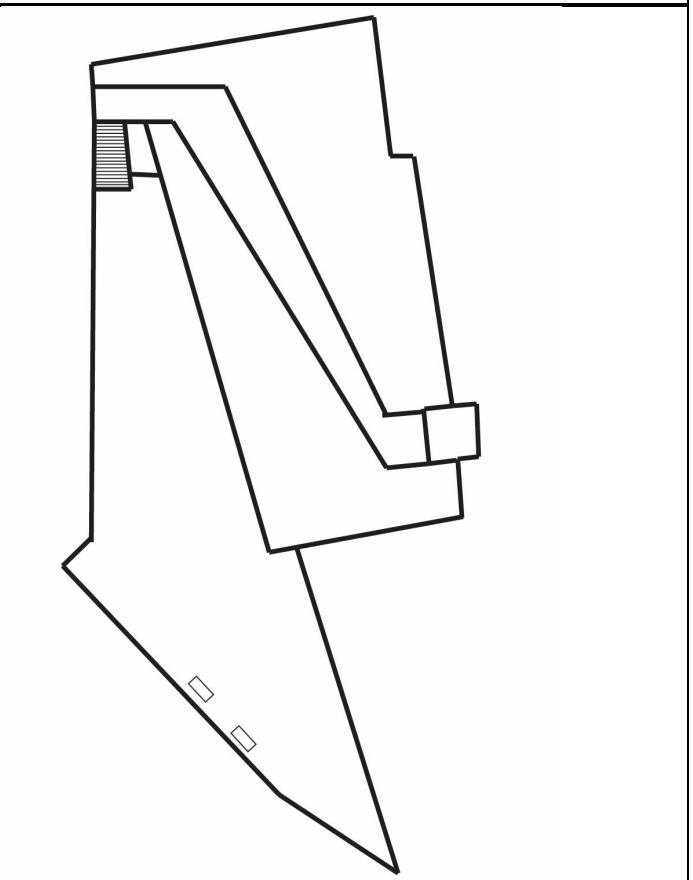


Figure 4.15 – Model of space use patterns chart

4.5. SUMMARY

There are many potential ways to assess a space's publicness. Starting by the identification of the weaknesses of existing studies, which tend to use publicness merely as a tool to justify certain cause-effect relationships, this study's Publicness Evaluation Model (PEM) is based on the premise that this concept can be used for a total characterization of a public space, not only of its current condition but also of its project. Since publicness is an intrinsic part of a public space, the features that build a successful urban space were the major starting point. An inventory that checks the presence or absence of a given physical feature, although easy to interpret and analyse, would fail to provide extensive insights about the meaning of that space. As a consequence, four distinct dimensions were considered for the application of the PEM.

Notwithstanding the several theories revolving around physical form, psychological perception and place context, just like the public realm and space have a well-defined physical dimension, the public life that goes on within it also means the existence of a social dimension. As humans are, by nature, social animals, if we see a crowd in a given space, we feel, in a way, compelled to head there, at least to satisfy our curiosity. The greater is the activity in a space the greater is the potential for a successful space, and therefore for a stronger publicness.

Nevertheless, it is not just how users occupy the space that matters, as the influence of design for the development of public life must also be considered in these studies. Often taken to set the use patterns and overall operation of space, the design of space must be based on the premise that form and function complement each other. By adding a space's design features to its evaluation, it starts to become apparent why some spaces are successful and why others are not.

Environments need to be able to adapt and distinguish between what is fundamental to the sense of place and hence should remain unchanged, and what is less important and can therefore change. Only through direct user assessment it is possible to assess whether a given space best serves their actual needs and expectations.

However, public spaces are not created out of thin air neither possesses the idealized features out of the box. Even though recent pressures over public space have had its toll over its management systems, recognizing the role of who owns the space can prove essential in steering the development of a new space or changes in existing ones in the right direction.

In summary, several dimensions and factors come into play when determining the publicness of an urban space. In fact, the title of this thesis denotes the will to study the changing publicness of 'urban spaces' and not just of 'public spaces'. Cities, as complex entities, demand complex spaces and terms such as design, cultural and civic identity, freedom, and democracy are quintessential in this definition. The questions facing urban planners, designers and managers are several: How to find, create, and maintain these types of spaces? Only after defining 'how much' publicness can be identified in a given space, the concept of public space can be suitable for articulating with and redefining the on-going urban dynamics.

5

APPLICATION OF PEM – PUBLICNESS EVALUATION MODEL

5.1. INTRODUCTION

After the definition of the publicness evaluation model in the previous chapter, its application is operationalized ahead, starting with the presentation of the case study selection process, encompassing the selection of the cities to assess, followed by the evaluation of the more suitable spaces in each one.

Each case study was put under the scrutiny of the Publicness Evaluation Model in three distinct sections. First, an analysis of each space's publicness score in the project stage is presented, combining the information collected in the interviews and various strategic documents. A second section addresses the publicness evaluation of each study during its operation stage. The third and last section appears as a consequence of the evaluation process. The large amount of time expended, combined with the large volume of collected data regarding each space use patterns, justified the creation of a separate section where the findings from this process take shape.

5.2. CASE STUDY SELECTION

As the title of this thesis suggests, traditional public spaces, i.e. those under public ownership, are not the sole target of this study. Spaces under private management are equally important for this study. This opens the remit of possible case studies to various types such as public parks, squares and plazas, public buildings and associated public space, transport hubs, sites subject to revitalization processes, private spaces of public access with shopping malls being an example, 'semi-public' spaces, and underused spaces, the so-called 'non places', among others.

It is important to notice the fact that this work introduces management schemes into the assessment of a space's publicness. This means that the examples at stake will have to envelop the main dimensions of public space management, demanding a search for the inclusion of publicly, privately and community owned and/or managed spaces, which probably will present itself as the major challenge of this study. There was also a need to select spaces that could be analysed throughout an extended period, in order to evaluate its dynamics over the course of the day, week and even the year, mainly regarding spaces where usage depends in a great manner of the weather conditions. As different policies of urban space creation and management can have an effect in the definition of a space's success, different urban areas, preferably in different national contexts, would have to be considered.

The city of Porto, in Portugal, was the first to be selected for analysis. This decision came as no surprise as it is the city of the host institution of this PhD research and the home city of the author, implying a greater level of knowledge and understanding of its dynamics, most important spaces and buildings. The

city of Porto has been recently experiencing comprehensive shift in terms of the relationship between public space and urban residents, validating this choice even further. Originally, and up until the 1980's, Porto's city centre was the agglutinating centre of a large urban area. Housing, administrative, and commercial functions formed a lively centre of an important industrial region. However, the closing and relocation of most of its industry to the surrounding municipalities and a growing importance of the service sector, aided by the development of better road connections and public transport networks, meant a similar trend for residential location patterns. During the 1990's, large shopping centres were built in the outskirts of the city, scattered across the growing surrounding municipalities. As in other parts of the world, the traditional retail stores of the city centre were unable to compete with these new agglomerations and started closing doors, leaving public spaces surrounded by a sea of derelict and abandoned storefronts. This increased the perception of danger of this area, particularly at night time.

In 2001, Porto won the bid to host the 'European Capital of Culture' in par with Rotterdam, Netherlands, and implemented, throughout the year, a programme of arts and cultural events, upgraded and new state of the art cultural facilities, and an attempt to regenerate the decaying city centre (Balsas, 2004). From the beginning, this was seen as an opportunity to channel central government and European Union funds to revitalize the city. The 2001 European Capital of Culture focused on three main axes: urban regeneration; upgrade and construction of cultural facilities; and cultural events (ibid.). This first range of measures was both the most visible one and the greater legacy of this initiative. The regeneration operation included, beyond a large scale public space renovation in four main squares and adjacent streets, the implementation of a new mobility plan, giving a higher priority to the pedestrian, the re-introduction of the historic tram and the introduction of a new light rail system, and a widespread construction of underground parking garages, apart from economic and housing programmes. This process was referred to as 'the return to the city centre' (Porto2001, 2000). Porto started to generate buzz in the global tourist scene. The growth of low-cost airlines in Porto's airport that followed gave a huge tourism boost to the city, attracting visitors and stimulating economic activity and, as a consequence, public space usage. Also, a new wave of bars, clubs, and cafés swept through Porto's downtown, attracting hundreds of young residents every night, creating a lively atmosphere.

As mentioned before, a city in a different context allowed the comparison with different urban dynamics and social traditions. The study of different contexts is essential to analyse the differences in management schemes, values, and common practices, but also regarding the overall society, who may interpret public space in a different manner and hence use it and value it differently. In an ever more globalized world, differences among different places still exist and their identification is still essential. The key point, therefore, is to encompass the largest variety of spaces in all of the four main dimensions of study. Southern European cities present a similar pattern of public space usage, more pronounced in Spanish and Italian cities, and therefore would not present as pertinent additional case studies. The search should therefore shift to cities in a northern location. British cities present interesting case studies, as England was home to some of the most important urban development processes and dynamics in terms of urban public space creation, as are the examples of the city parks movement, the establishment of royal parks, among others, but also by being in a more advanced stage regarding the promotion of new management schemes for its public spaces, including the community and the private sector. Out of this context, several UK cities presented themselves as likely case studies. The first step of this selection consisted in the identification of all major urban areas in the country (Table 5.1), in order to select the ones that matched closely the size of Porto.

Table 5.1 – List of major urban areas and cities in the UK

Urban Area		Major City	
Designation	**Population (2011)**	**Name**	**Population (2011)**
Greater London	9,787,426	London	8,308,369
Greater Manchester	2,553,379	Manchester	503,127
West Midlands	2,440,986	Birmingham	1,074,300
West Yorkshire	1,777,934	Leeds	757,700
Liverpool	864,122	Liverpool	466,415
South Hampshire	855,569	Southampton	253,651
Tyneside	774,891	Newcastle	280,177
Nottingham	729,977	Nottingham	303,900
Sheffield	685,368	Sheffield	522,698
Bristol	617,280	Bristol	428,234

The cities of Southampton and Newcastle, with populations between 250,000 and 300,000 were the ones closer to Porto's 237,591 inhabitants. Apart from population numbers, that naturally affect the city's size and potential for public space usage, it is interesting to find one that mimics some of Porto's dynamics and urban features.

The recession that hit England in the 1970's and 1980's had a major impact on several heavily industrialized cities, being Newcastle one of the country's most affected urban areas. Once one of the 'workshops of the world' (Cameron, 2003, p. 2368), the decline of heavy industries of coal mining, shipbuilding and heavy engineering were the trigger to broader urban economic and physical decline (Akkar, 2005). As a consequence, large areas along the riverside became derelict, leading to a wider deterioration of the urban fabric, a poor quality public realm, and an overall loss of living and working population. As with Porto, Newcastle benefitted from a large scale public embellishment program, known as the Grainger Town project (Robinson, 2003). The launch of place-marketing and advertising campaigns, in par with the creation of a new urban landscape, promoted a city with "quality city retailing, the best rapid transit system in Europe, beautiful countryside, and a wealth of cultural resources" (Wilkinson, 1992, p. 182). Many of these techniques mimic others adopted in several UK and North American cities. With these, the city became more attractive not only to local community but also to external investors and decision markers. Several public and private sector agencies were created for this matter and several of them were "keen to redefine Newcastle as a big village with its connotations of cosiness, community and humanizing qualities" (ibid., p. 203). One of the most important outcomes was the appearance of a considerable number of attractive public spaces, built with high-quality construction materials, embellished with artwork and other relevant design features. Another factor plays a relevant role in favour of the choice of this city. The established contacts between CITTA, the home research centre of the author, and the Global Urban Research Group of the University of Newcastle, would provide important research synergies, generating additional value for this research.

With both cities selected, the next stage consisted in the selection of the four case studies in each of the two cities. In order to keep the case studies comparable between the two different spatial contexts, a decision was made to limit the study to urban squares inside the city central districts, severely reducing the number of potential case studies. The assortment of possible case studies in the city of Porto is presented in Table 5.2 and Figure 5.1.

Table 5.2 – Porto's potential case studies

Name	Area (m^2)	Ownership	Responsible Entity	Space type
Trindade metro station square	3,347	Public	Metro do Porto	New space
Batalha square	7,013	Public	Porto2001	Existing space
Carlos Alberto square	2,146	Public	Porto2001	Existing space
Campo Mártires da Pátria	3,874	Public	Porto2001	Existing space
D. João I Square	4,708	Public	Porto2001	Existing space
Infante square	3,252	Public	Porto2001	Existing space
Leões square	2,033	Public	Porto2001	Existing space
Poveiros square	2,468	Public	Porto2001	Existing space
Guilherme Gomes Fernandes square	975	Public	Porto City Council	Existing space
Largo do Moínho de Vento	356	Public	Porto City Council	Existing space
Cardosas square	1,865	Private	Lucios	New space
Lisboa Square	5,321	Private	Urba Clérigos	Existing space

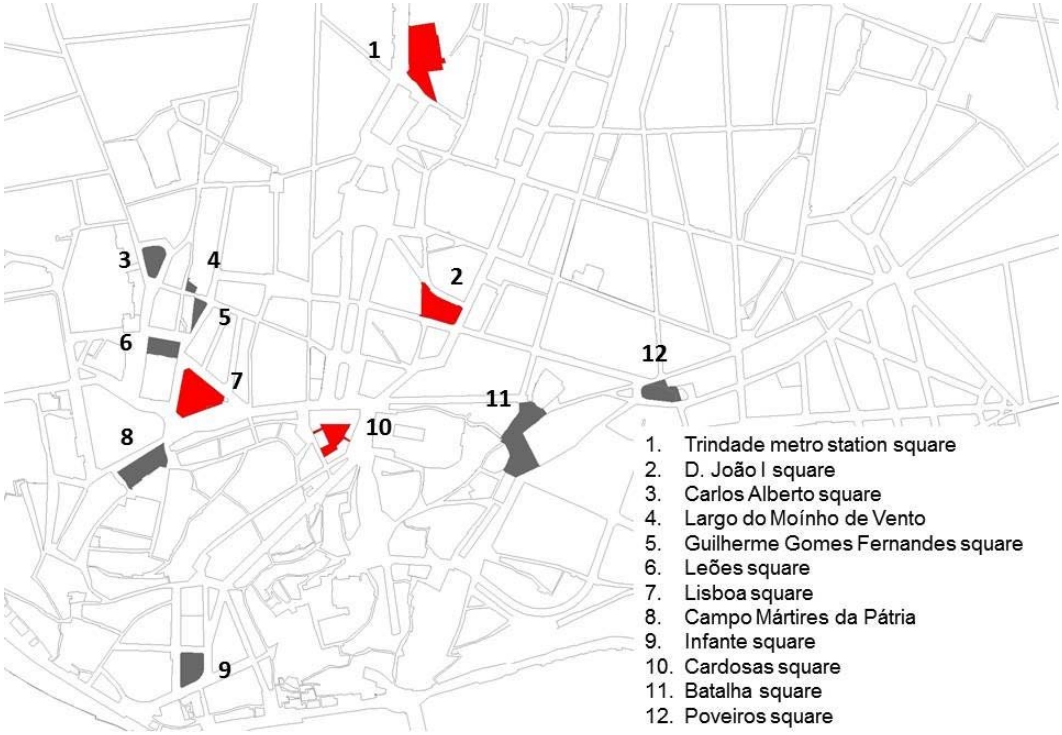


Figure 5.1 – Porto's potential case studies

As seen from the above table, Porto2001 clearly left its mark in the city of Porto, leaving a strong legacy in terms of public space intervention, encompassing over two thirds of the existing selection. The four selected case studies would be equally divided between public and semi-public spaces. The last two were easy, as this phenomenon is relatively recent in the city, and only two semi-public spaces exist in the city centre. On the other hand, the selection of traditional public spaces would be a more serious challenge.

Size was the first criterion of elimination. Guilherme Gomes Fernandes Square and Largo do Moinho de Vento were excluded, as their small footprint would considerably reduce the range of possible uses. Batalha square's irregular shape was a factor ruling in favour of its elimination.

Porto2001 intervention in the city centre of Porto was characterized by a coherent premise, which created spaces with granite-paved large open sections, in order to create a new urban identity. As a result, Trindade metro station square was included in the analysis, in order to establish a comparison point with the interventions promoted by this public entity. The final decision was then limited to a choice of one space among the six Porto2001 interventions. Infante square was selected out of the analysis as its isolation from the surrounding buildings in all four sides by vehicular traffic (Figure 5.2) forces pedestrians to cross traffic lanes in order to access its central sections. Another justification was its location away from Porto's main central area, as opposed to the remaining case studies.

Figure 5.2 – Infante Square (Google maps and author)

Carlos Alberto Square was ruled out of the analysis for two reasons. First, and in parallel with Infante square, its isolation from the surrounding buildings and sidewalks reduces its attractiveness as an urban square. The second justification is related to the nature of its physical intervention. Although the square was entirely dug out for the construction of an underground car park, the final project retained the physical configuration of the central section, with minimal changes (Figure 5.3), consequently reducing the relevance of this analysis.

Figure 5.3 – Carlos Alberto Square physical evolution (Porto City Council historical archive and Google maps)

Campo Mártires da Liberdade and Poveiros square were also not deemed adequate for this study, as the presence of more suitable public spaces in the vicinity, such as Cordoaria and São Lázaro Gardens, respectively, would naturally steer pedestrians away from this space (Figure 5.4).

The final decision was between Leões and D. João I Squares, being the adjacency to other public spaces the tiebreaker factor. D. João I is located further from its closest public space than Leões square, reinforcing its role as a public space. Also, it benefits from having a more strongly defined physical structure, therefore being easily identifiable as an urban square and a focal point for urban life. D. João I Square proved then to be the more suitable candidate to close the lot of the four assessed case studies in Porto.

Figure 5.4 – Campo Mártires da Liberdade and Poveiros Square in relation with nearby spaces (Bing maps)

As a result, the four case studies to assess in Porto would be:

- Trindade metro station square
- D. João I Square
- Cardosas square
- Lisboa Square

The selection process in Newcastle followed the same steps as in Porto, summarized in Table 5.3 and Figure 5.5.

Table 5.3 – Newcastle's potential case studies

Name	Area (m^2)	Ownership	Responsible Entity	Space type
Blue Carpet	2,454	Public	Newcastle City Council	New space
Cathedral square	518	Public	NE1 / Newcastle City Council	Existing space
Old Eldon Square	4,717	Public	Newcastle City Council	Existing space
Princess square	816	Public	Newcastle City Council	New space
St. James Gate square	2,686	Private	McAleer & Rushe	New space
Times Square	6,178	Private	TWDC	Existing space
Trinity Gardens square	884	Private	Silverlink	New space
Waterloo Square	2,900	Private	Kingston Property	New space

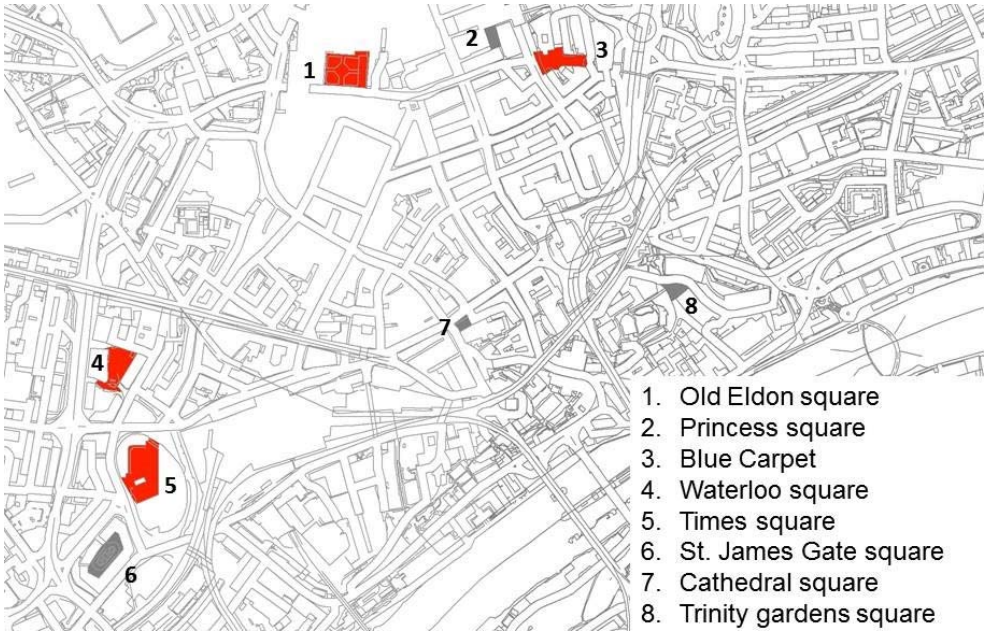


Figure 5.5 – Newcastle's potential case studies

The first visible main difference in comparison with the similar table in Porto is related to the division between public and semi-public spaces. In Newcastle, in contrast with the selected Portuguese city, the private sector has a greater involvement in the wider city development process, contributing with the creation of a larger number of public spaces. The selection process started with the publicly owned spaces. Here, the compact dimensions of Cathedral and Princess Squares simplified the overall process, automatically excluding it from the process. As a result, Old Eldon Square and the Blue Carpet were the first two spaces selected for this study. Trinity gardens square ended up following the same elimination path. St. James Gate, although featuring seating and green elements, suffers from a relative isolation from the surrounding areas, not only in visual terms, but also in terms of providing a pedestrian shortcut between adjacent streets (Figure 5.6).

Figure 5.6 – St. James Gate aerial and ground views (Bing maps and author)

As a result, the assessed case studies in the city of Newcastle upon Tyne were:

- Times Square
- Waterloo Square
- Old Eldon Square
- Blue Carpet

Following the methodology defined in the previous chapter, each space was assessed for a total of seven daily periods, each with a total of 1h30, in order to allow cycling between all city spaces. It is important to note the 1h difference between the start and end times of periods F and G in the two cities, due to an earlier dinner hour in the UK, which ends up advancing, on average in 1 hour, the end of office work hours and business closing hours, as well as the start of the evening economy.

As explained in the previous chapter, each of these seven periods was repeated in a total of twelve days, equally distributed among working days and weekend days, but also among cold, rainy, and warm days. Although the initial intention was to analyse each day in a continuum from early morning to evening, i.e. from period A to G, the winter and spring of 2013 was marked by considerable weather instability, both in Porto and Newcastle. As a result, observations followed an irregular pattern, with daily cycles spread by multiple days (Table 5.4). Summer periods showed less instability, allowing for more regular observation patterns. Nevertheless, for each observation period all spaces of each city were assessed successively, therefore minimizing the effects of this instability. Table 5.5 indicates a list of all interviewed agents, necessary for the application of the PEM, as well as its affiliation and space to which they are associated. The entities responsible for the management of Waterloo Square and the design of the Blue Carpet, were not reachable, even after successive attempts. Fortunately, this gap was filled by further documentation and talks with additional development agents, allowing for the collection of information for all indicators in all eight spaces.

Table 5.4 – Daily assessment periods

Period		PORTO	NEWCASTLE
A	Early Morning	09h00 – 10h30	09h00 – 10h30
B	Late Morning	10h30 – 12h00	10h30 – 12h00
C	Lunch	12h00 – 13h30	12h00 – 13h30
D	Late Lunch/ Early afternoon	13h30 – 15h00	13h30 – 15h00
E	Afternoon	16h00 – 17h30	16h00 – 17h30
F	Late Afternoon	18h30 – 20h00	17h30 – 19h00
G	Evening	21h00 – 22h30	20h00 – 21h30

PORTO

2013		A	B	C	D	E	F	G	2013		A	B	C	D	E	F	G
Week	Jan 7th	■	■	■	■				Weekend	Jan 26th			■	■	■	■	
	Jan 8th					▒	■	■		Feb 2nd	■	■					
	Jan 9th	▒	▒	▒	▒					Feb 3rd	■	■	■				
	Jan 17th					▒	▒	▒		Feb 16th							▒
	Feb 18th			■	■	■				Feb 17th	▒	▒	▒	▒	▒	▒	
	Mar 4th				▒		▒	▒		Feb 23rd				■	■	■	■
	Mar 6th	▒	▒	▒						Mar 8th							■
	Mar 12th					■	■	■		Mar 9th					▒	▒	▒
	Mar 13th	■	■							Mar 10th	▒	▒	▒	▒			
	Jun 25th				▒	▒	▒	▒		Jun 29th	▒	▒	▒	▒	▒	▒	▒
	Jun 26th	▒	▒	▒						Jul 7th	▒	▒	▒	▒	▒	▒	▒
	Jul 3rd	▒	▒	▒	▒	▒	▒	▒									

NEWCASTLE

2013		A	B	C	D	E	F	G	2013		A	B	C	D	E	F	G
Week	Mar 26th			▒	▒	▒			Weekend	Mar 23rd	▒	▒	▒	▒	▒	▒	▒
	Mar 27th	▒	▒				▒	▒		Mar 30th				■			
	Apr 3rd					■	■	■		Mar 31st					■	■	
	Apr 4th	■	■	■	■					Apr 6th							■
	Apr 9th							■		Apr 7th	■	■	■				
	Apr 15th	■	■			■	■			Apr 13th	■	■	■	■			■
	Apr 16th			■	■					Apr 20th					■	■	
	Apr 17th	▒	▒	▒	▒	▒	▒	▒		May 11th							▒
	May 7th	▒	▒	▒	▒	▒	▒	▒		May 12th	▒	▒	▒	▒	▒	▒	
	May 31st					▒	▒			May 4th							▒
	Jun 3rd	▒	▒	▒	▒			▒		May 5th	▒	▒					
										May 6th			▒	▒	▒	▒	
										May 31st							▒
										Jun 8th	▒	▒	▒	▒	▒	▒	

■ Cold days ▒ Rainy days □ Warm days

Table 5.5 – Interviewed agents

Name	Project	Affiliation
André Campos	Trindade square	Souto Moura Arquitectos
Pedro Mouro	Trindade square	Metro do Porto
Sergio Fernandez	D. João I Square	Atelier 15
João Pestana	D. João I Square	Porto City Council – Urbanism Department
Duarte Lema	D. João I Square	Porto City Council – Urban Management
Cristina Taveira	D. João I Square	Porto Lazer
Catarina Magalhães	D. João I Square	Porto City Council – GAEEP
João Silva	D. João I Square	Porto City Council – Public space management
Paulo Valença	Cardosas square	SRU
Maria Ferreira de Almeida	Cardosas square	FA Arquitectos
Jorge Sobreira	Cardosas square	Lucios - Gestão de Activos Imobiliários
Manuel Monteiro de Andrade	Cardosas square	FUNDBOX
Joaquim Almeida	Cardosas square	SRU
Graça Cunha	Cardosas square	Predibisa
Maria Portocarrero	Lisboa Square	UrbaClérigos
André Alves Simão Silva	Lisboa Square	Balonas e Menano Arquitectos
Francisco Rocha Antunes	Lisboa Square	John Nield & Associados
Sir Terry Farrell	Times Square	FARRELLS
Niamh Lightfoot	Times Square	Centre for Life – Event Bookings
Ian Simmons	Times Square	Centre for Life - Operations
Mark Bowman John Curtis	Waterloo Square	NAPPER Architects
Justin McLaughlin	Waterloo Square	Newcastle City Council – Development Control
Matthew Storey John Rippon	Waterloo Square	Newcastle City Council
Mark Allan	Old Eldon Square	CDA Architecture
Matthew Atkins	Old Eldon Square	Newcastle City Council
Tim Stone	Old Eldon Square	intu
Joanna Ward	Old Eldon Square Blue Carpet	Newcastle City Council – Community Safety
Lesley Richardson	Blue Carpet	Laing Art Gallery
Sarah Miller	Blue Carpet	Newcastle City Council
Adrian Waddell	All Newcastle spaces	NE1
Michael Criley Tony Wyatt Colin Haylock		Newcastle City Council

5.3. TRINDADE STATION SQUARE

5.3.1. PRESENTATION

The Metro system of Porto brought a new paradigm to the city. Not only a revolution in terms of urban transport, it was also understood as an opportunity to continue the public space revitalization process initiated a few years back for the 2001 European Capital of Culture event.

Trindade Metro Station results of a complete physical restructuring of the existing Trindade train station. The old station, combined with its support structure and buildings, created a strong physical and visual barrier in the area. As the new station required a much smaller footprint for infrastructure, the solution consisted in the creation of three main elements:

- An office building on top of the station, combined with street level commerce;
- A large square facing Trindade and Camões streets, allowing for public events;
- A rooftop garden, allowing access to the office building and to the west of the station;

The rooftop garden, with an extensive grassed area, designed to work as a 'meadow', would also double as a pedestrian circulation area, connecting the different areas of the station to the surrounding streets. On the 10th of July 2006, the last construction works were completed, although the space had already been open to the public for a few months.

The Metro's system main premise behind its public space projects was to boost public acceptance regarding this new transport mode, as they identified themselves as a rehabilitation agent, whose intervention could bring new investment, residents and business activities to the city. This reflects a win-win situation, as more people will represent more potential public transport users. Landscape integration is the common denominator among Metro's public space interventions. There was a great concern in tree planting and new public space creation throughout the network. For each space, the designer team sought the needs of each particular area and designed a solution accordingly. In Trindade, the geography of site was crucial in the adopted solution, as will be seen ahead.

It is important to mention that this space, although being considered as a public space, is not directly managed by City Council. In fact, almost all responsibilities regarding its operation are in charge of the Metro do Porto company. Still, as this is a public company, the space can be understood as a public space, in ownership terms.

Site area	14911 m^2
Ground level accessible area	5216,6 m^2
Ground level square area	3347,1 m^2
Ground level green area	1174,1 m^2
Rooftop garden total	4009,1 m^2
Rooftop green area	3201,7 m^2
Square perimeter	300 m
Square blank frontage	85,5 m (28,5%)

Figure 5.7 - Trindade metro station square information

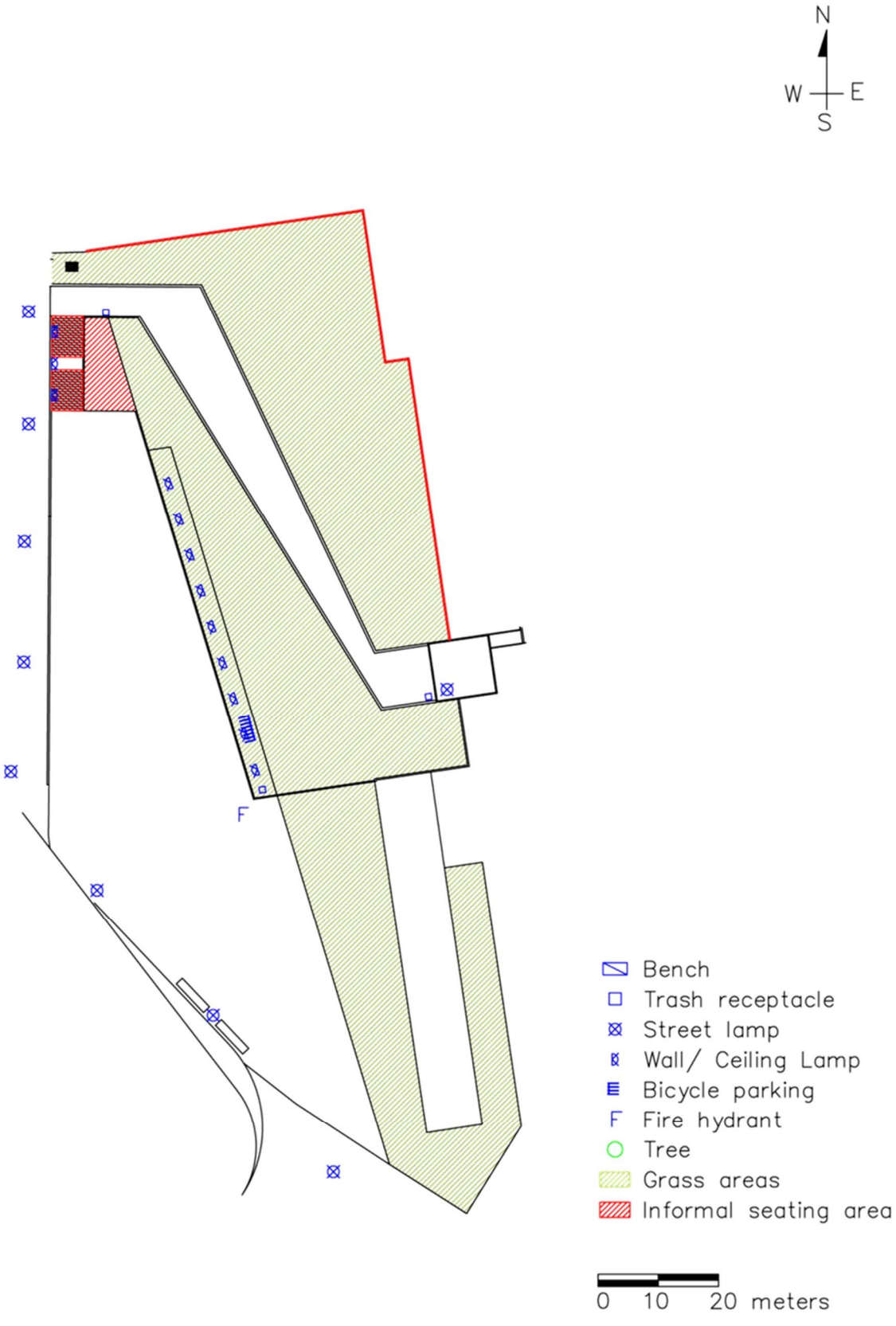


Figure 5.8 – Trindade metro station square design overview

5.3.2. PROJECT STAGE

The two large spaces of the rooftop garden and square were created with the intention of becoming event locations, "a public space where things could happen", in the architect's words, explaining the absence of any sort of urban furniture in the centre of the square.

As a traditional public space, it would be open 24/7, allowing free usage. The original project proposed a series of ground level commercial units along the west façade of the station, ending in a smaller tower, where mechanical connections to the rooftop garden would exist. Here, a small café and an art gallery would create an important attraction point to the site. Overall, this project presented good perspectives for the creation of activity, as it "would be a grand public space, it would have bars, and an art gallery". The location of the square, in the intersection of important streets, combined with the importance of the station in the overall Metro network, was expected to have heavy pedestrian traffic (Figure 5.9).

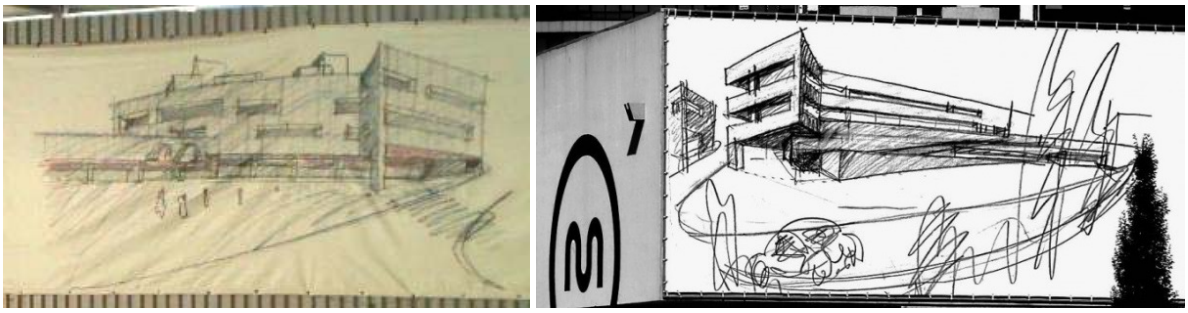


Figure 5.9 – Artist's impression of Trindade metro station building (http://photos1.blogger.com/img/1/1950/640/Souto%20Moura2.jpg; http://olhares.sapo.pt/client/files/foto/big/227/2275061.jpg, accessed on 14/04/2014)

Design-wise, this project was characterized by its architect's trademark, with values such as simplicity and straight lines, either colours or textures. Openness, luminosity, and availability of open space were viewed as essential elements. These features would also bring reduced maintenance costs, therefore contributing to the conservation of its physical condition over time. This was not an imposition of the client, the Metro Company, as the architecture team acknowledged the liberty that was given through this project's conception process.

Due to the nature of the project, the east side of the garden would require the installation of gates, as it doubled as a station entrance (Figure 5.10). Still, it would be possible to freely access this section via the opposite side. The gradient of the street that borders the space's western edge required the creation of a blank wall, inevitable in order to maintain a flat central section. Unfortunately, this choice ended up blocking any possibility for visual and functional interaction. The rooftop garden, standing in a higher position, would allow for clearer unobstructed views. Lighting would border the main path of the garden and flank the station building, which, in theory, would provide proper lighting conditions. Bins would be placed near the station entrances, in order to discourage littering inside the station. Bicycle racks would also be installed near these same entrances. Traffic poles would be fitted to deter traffic invasion and therefore allow for the free installation of events. However, despite all these concerns, seating was not considered relevant for the purpose of this space.

Figure 5.10 – Trindade station Square limits and east garden entrance

As this space is identified, both by Metro Company officials and the architects, as a public space, the main concerns associated with this space follow, to the some degree, the main premises of the conception of a traditional public space. The proper lighting of the space, combined with its visual and physical openness would lead to the creation of a safe space. The good architecture of the space, even if stripped of any superfluous elements, would, in theory, justify the creation of a quality space. By representing of the main entrances into the Metro network, if the system worked well, people would be satisfied and would value it. The management approach towards security would be the same as with any other station project, meaning that staffed security was necessary inside the station only. However, as part of the station develops at ground level, this surveillance would naturally extend to the square's space. The rooftop garden, due to its physical isolation, would be a less surveyed space.

As other physical interventions were scattered across the city, mainly at every station location, City Council as well as other entities, such as the police, fire department and the city's business owners association were interventional partners, during construction and project phases. On the other hand, there was not a clear process of public consultation and public participation was virtually inexistent, which could have had the possibility to change the project's outcome.

Unfortunately, not all difficulties were surpassed, mainly the lack of capacity to completely execute the project. Although the Metro Company does not refer an official explanation for this last minute change, the architects of the space identify financial constraints as the only reason that can explain this outcome. As a result, the office building and the north tower never saw the light of day.

5.3.3. OPERATION STAGE

Today, Trindade metro station is one of the main entrances to downtown, fact that is clearly visible by the heavy pedestrian flows at the beginning of every morning. However, this pedestrian flow is not consistent, as it is characterized by several peaks, in articulation with the arrival of each train. Averaging these peaks in a longer interval results in considerably smaller numbers, meaning that it falls considerably short of the 60 ped./min value. Use dynamics are not a strong point in this space, as the absence of suitable urban furniture and of regular public animation events lead to a 'lack of things to do' (Figure 5.11). As a result, the square is mostly used for brief moments, to talk on the phone or smoke a cigarette, before heading to work or into the Metro trains. It is also used as meeting point, especially by teenagers, either to head to further destinations or to the downtown bars and pubs at weekend nights.

Figure 5.11 – Trindade station Square users

The project incompletion was, in the architects' perspective, key to characterize the lack of use of the rooftop garden, but also to leave the square mostly underused. As a result, the south section, between Trindade Street and the station entrance, is the only lived space of the entire site. The creation of additional commercial spaces, either in the existing building or in the proposed extension, is believed to be necessary in order to create the attraction points that would allow the square to be lived. However, for profit reasons, new commercial spaces were placed inside the building. In the architect's words, "if during the day, I don't have to take the Metro, I'm not doing anything there. It's a space that doesn't have a café or anything, nothing that attracts me there".

As the space does not do anything more than articulate the Metro station with the urban space, if one does not need to take the Metro, most likely there will be no reason to use the space, even though the space might be visually appealing and well maintained. Although the Metro Company studied the possibility of introducing stricter access measures to the rooftop garden, through its physical enclosure, this possibility was quickly withdrawn, as it would severely interfere with the architectural condition and pose a number of technical constraints. The inexistence of the south access tower means that a mechanical connection between the station and the square cannot be found. However, the natural slope of the adjacent Camões street offers an alternative accessible solution. The lack of formal seating locations opens to the imagination the location of possible resting areas. As a result, steps, ledges, fire hydrants, and the bicycle rack are used as improvised seating locations, especially among the younger users, representing the only visible form of space appropriation (Figure 5.12).

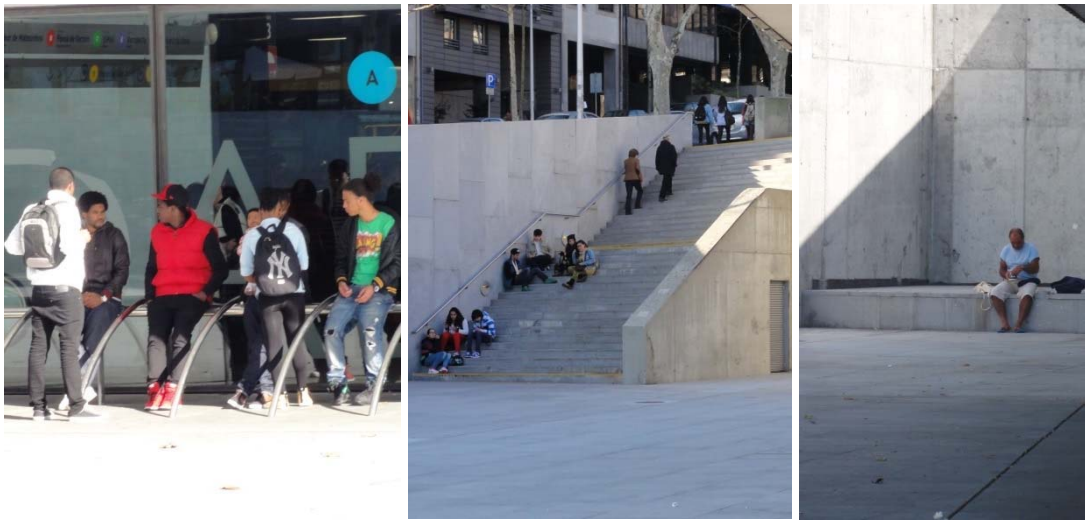


Figure 5.12 – Trindade station Square improvised seating locations

The rooftop garden, with its lack of urban furniture and physical isolation, is often devoid of any use and pedestrian crossings are scarce. At nighttime, the insufficient lighting scheme, caused by vandalism acts over existing lamps that were not replaced, reinforces the space's lack of proper conditions for use. A single light spot was installed on top of the east tower, but is clearly insufficient to properly illuminate the site. Even though the space's minimal design leaves little to the mercy of vandalism, a signage element on the upper level station entrance was removed, showing the marks of its previous existence. Although some trash receptacles are installed near the station entrances, these are clearly insufficient as trash is often found near the northern stairs. Public toilets are available inside the station but are not easily accessible and require the purchase of a transport ticket. The space's traffic restriction is often effective, with the exception of maintenance and police vehicles that seldom mark their presence. Some protection from the natural elements exists, namely alongside the station building. However, during hot summer afternoons, the direct incidence of light detracts users away from this section of the site, forcing them to gather at the west wall area, which is under shade (Figure 5.13).

Figure 5.13 – Trindade station Square users seeking shade

The majority of users identify Trindade metro station square as a public space, explaining its relative high levels of perceived freedom. However, the overall opinion starts degrading when questions are asked regarding particular elements of the space. The lack of activity is responsible for these average readouts, while some opinions mention the lack of seating locations and trees. The emptiness of the site was expressed in statements such as "it's just a passage site", "could have more stuff going on, especially at night", "it's very large and empty", or "I know that at night there are here some less advisable groups, but if we don't mess with them, there is no problem". Still, practically half of its users intend to be more active in the space's management, while some users even suggested an online platform for that purpose, which could generate a positive increase in the currently weak classification of its user valuation. Only half of the surveyed users consider the space to be under ideal maintenance conditions.

Management-wise, and although the Metro company mentioned that the square is not less surveyed than the station itself, the truth shows that security personnel often divert their eyes from this external space. The rooftop garden, as a more isolated space, depends more heavily on the security rounds, facing long periods without any surveillance. Though an ice cream kiosk is located close to the square, it is, in fact, outside of the square's boundaries, and therefore cannot be considered as an element of the space. Other amenities, including Wi-Fi, are also lacking.

Despite the acknowledgement of the existence of some 'minor' issues on the rooftop garden, due to its greater enclosure and reduced usage, such as grass deterioration or littering, the space's owner recognizes the inexistence of any major constraints to the proper operation of the space, as the company's concession system means a greater deal of concern with key operative aspects, even if the focus is targeted towards small but pertinent aspects. Periodic inspections can alert for the necessity of any correction issues, as there is a concern in keeping the space in proper physical condition. This alert can originate from the station agent, its tenants, or any Metro costumer. Broken slabs of the square's pavement are often replaced in less than a week, validating this concern (Figure 5.14). As opposed to the project and building stages, communication with external entities takes place in an occasional frequency. Nevertheless, when there is any problem in the boundary between the different jurisdictions, there are contacts that can be established. As stated by one of the Metro Company's members, "one can say that we are good neighbours". One example regards the maintenance scheme, as the site's cleaning is done by the City Council teams, while the garden and general maintenance works are under the supervision of the Metro Company.

Figure 5.14 – Trindade station Square response in quick maintenance issues

There is receptiveness to the establishment of public animation initiatives, in coordination with Porto Lazer, the city council division in charge of space animation. In fact, during the interview, considerable interest was shown in the possibility of greater public participation in the management of the space, as this greater degree of involvement will increase user's sense of ownership and improve the image's public image. Still, and while there is an open channel of communication between the company and the Metro users, no major outcomes have come from that.

According to space's management, "the main building and the two towers would give use to the area up top which is a bit isolated at the moment. With that, we have had a few problems regarding people who vandalize the grass, with dogs, or because they go there at night in groups, and we have some difficulties in keeping that one in good conditions. The grass at the lower level works pretty well, because it ends up being a more surveyed space" (Figure 5.15). The inability to complete the initial project is seen with some regret as "it is our living room. It's a pity because it's a space that is not finished and that brings some deficit to the use of the square. With that building, the garden would start having use, surveillance, and people would start using it in another path. Because it has use, people appropriate it. I think people recognize the quality of the space, and that's why they appropriate".

Figure 5.15 – Trindade rooftop garden lack of use and physical degradation elements

There is a large gap between the understanding of the overall performance of the space between the space management and conception team. Although there is an official opinion of the Metro Company, characterized by an overall satisfaction as the space fulfils effectively its role of being one of the company's visiting images, the architect team show some dissatisfaction as the lack of public space usage culture by Porto's residents, combined with the project incompletion, goes against their original intentions.

5.3.4. SPACE USAGE PATTERNS

The use and circulation patterns of this square are strongly influenced by the presence of Trindade metro station. The main pedestrian routes of this space were divided into seven distinct paths, where traffic counts took place (Figure 5.16). Paths number one to five measure all traffic to, and from, the station. One and three gather the largest chunk of the overall traffic as they represent the main access to the station from the south and east, respectively. Paths number four and five symbolize all traffic from the main station entrance towards the north, with the last one representing traffic along the square's western edge and below the upper level overhang, which in rainy days can identify the effectiveness of its weather protection features. Changes between transport modes, in this case between metro and bus are represented by path number two. Path number six represents cross-traffic through the square, i.e. pedestrians who do not use the metro station. Due to the single paved path directly connecting the two existing entrances on the space's rooftop garden, path number seven shows the only possibility for pedestrian traffic in this section.

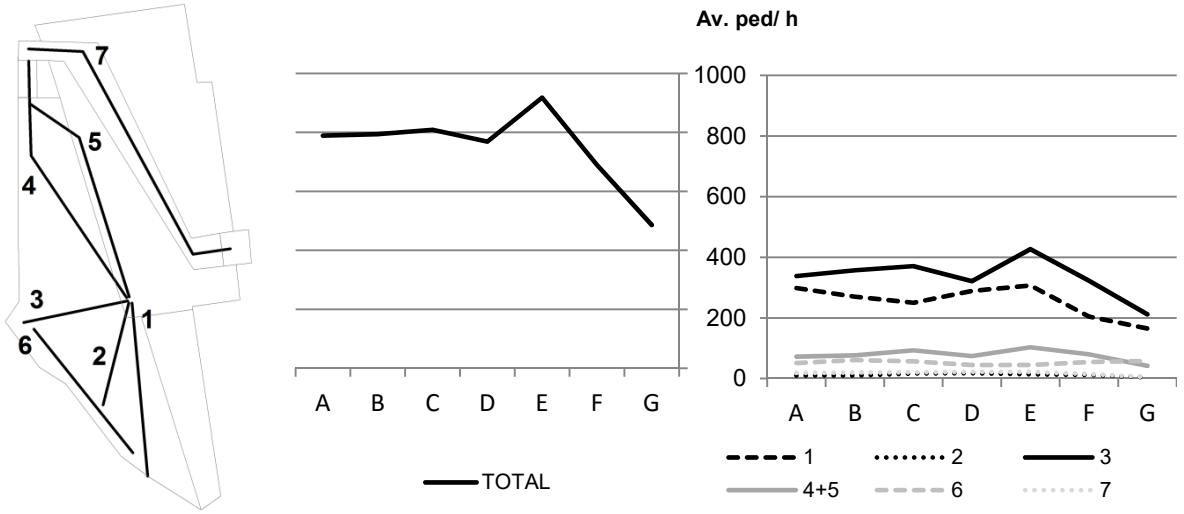


Figure 5.16 - Trindade metro station square average daily pedestrian flows

Overall, this space presents a relative homogeneity in the number of passing pedestrians, over the first half of the day with around 800 pedestrians per hour. After a peak at mid-afternoon hours, pedestrian footfall starts to decrease to an average of 500 ped./h during the evening period. The two main pedestrian routes across the space (one and three) show a decrease tendency throughout the day, with a peak increase at the afternoon midpoint, corresponding to the end of office and school class working periods. The remaining paths show a uniform pattern, although also with a slight tendency of reduction as nighttime approaches. Over 90% of the total pedestrian traffic in the square has the metro station as origin or destination, as the number of paths that included the station as origin or destination had already shown. As a result, direct cut-cross traffic has very little expression in the overall results. The main goal of achieving a strong functional connection between the square space and the station, as was intended in the architect's brief, was therefore achieved.

Despite the fact that the site boosts a relatively central location, with a significant concentration of commercial activities towards the east, other metro stations are better suited to serve street shoppers more effectively. Although the area towards the west presents a high concentration of commercial units, it faces a significant degradation of its building stock, resulting in a high number of vacant lots. This

area presents therefore a possibility, even if uncertain, given the current economic climate, to increase pedestrian traffic in Trindade station Square.

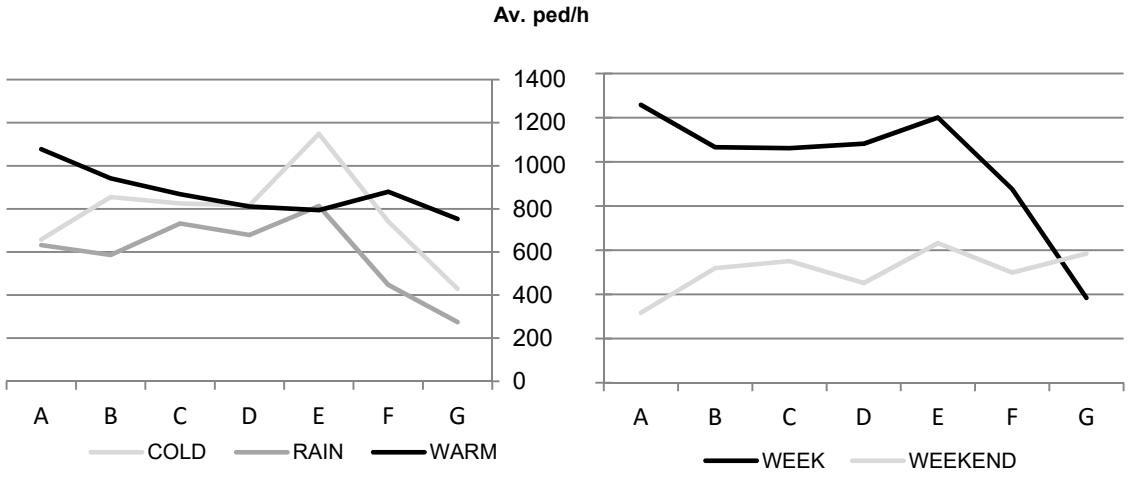


Figure 5.17 – Trindade metro station square average pedestrian flows discriminated

Porto's city centre sees a low share of residential population, making work, shopping, and leisure the main uses of this area. As a result, working days are characterizing by higher pedestrian traffic in comparison with weekends (Figure 5.17). Peak traffic coincides with the early morning (A) and mid-afternoon (E), marking the start and end of traditional work and school daily periods. Between them, pedestrian traffic maintains a steady high volume, justifying the above-mentioned premise. Late afternoon and evening periods mark a steep decrease in pedestrian traffic. Weekends, on the other hand, show the opposite trend. Tourists, occasional shoppers, and young people looking for a leisurely time in the centre originate a steady increase in pedestrian traffic throughout the day.

Weather conditions also influence the behaviour and choices of pedestrians through this space. Both cold and rainy days present similar hourly patterns, with the latter presenting systematically lower values, which might indicate a shift in pedestrians looking for a leisurely stroll in the city centre to enclosed spaces, such as the large shopping centres in the city's periphery. Warm days are characterized by a steady decrease throughout the day, due to the increase in temperature, and stabilization towards the end of the day. This might be a consequence of longer daylight periods and overall more pleasant temperatures at late afternoon and evenings, extending user's time in the city centre.

The path identified with number five follows the station's edge, providing protection from the rain and the sun, and would, in theory, gather user's preferences over path number four, which crosses the 'unprotected' central section of the square (Figure 5.18). As the next graph clearly shows, in rainy days path number five provides effective rain coverage, although late morning and lunch periods show a considerable reduction. No reason could be identified for this abrupt change, making it only attributable to the particular days analysed. On warm days, a share increase is also identifiable throughout the course of the afternoon. This, as expected, is an effect of the protection from the discomfort generated by direct solar radiation on hot days.

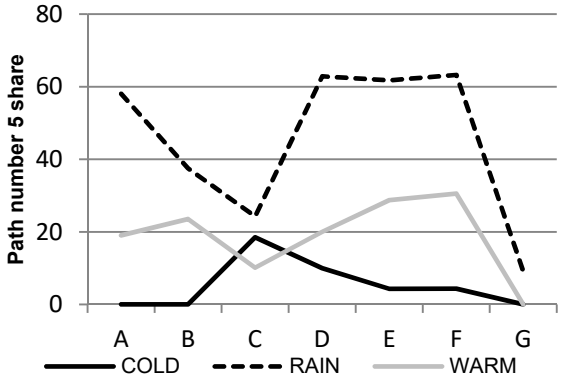


Figure 5.18 – Path number 5 pedestrian traffic share in the overall northbound traffic (paths 4+5)

Static usage in Trindade station Square presents a parallel with its overall pedestrian flows. The terminology 'static use' combines the activities 'standing', 'seating', eating/drinking' and 'using mobile', ignoring the activities 'strolling', 'jogging' and 'playing sports', as its representativeness in the overall usage is mostly irrelevant. As expected, period E represents average daily peak usage, with evening use presenting similar usage levels to those registered during mornings (Figure 5.19). The rooftop garden area, although making, in physical terms, almost 50% of the entire site attracts only 10% of the space's overall user base. While its green coverage could establish the foundations for a heavily used public space, the lack of seating locations and shading, combined with physical and visual isolation, deter most of its potential users.

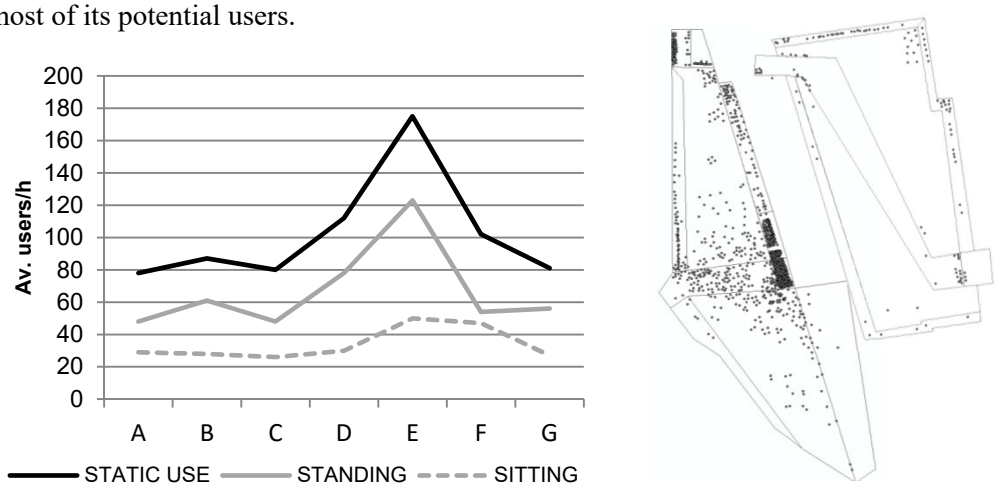


Figure 5.19 – Trindade station Square static use hourly evolution and overall spatial distribution

Both in the lower and upper levels, usage is mostly focused along the space's edges. The lack of seating and shading across the upper level central section forces users towards the walls over its edges, where the act of sitting was often identified. The lack of formal seating locations justifies the act of standing as the most common static use. When moving towards the space's lower section, a clear concentration is visible along the station's entrance and below the upper level overhang, regardless of the daily period or day of the week in analysis. Usage across the square's central section is mostly focused in the area between the station entrance and the space's main eastern entrance, visible with particular incidence during the afternoon, once again defending the thesis of the use of this space as a meeting point. The higher concentration during mornings is a consequence of the sport activities promoted by Porto City Council during summer weekend mornings.

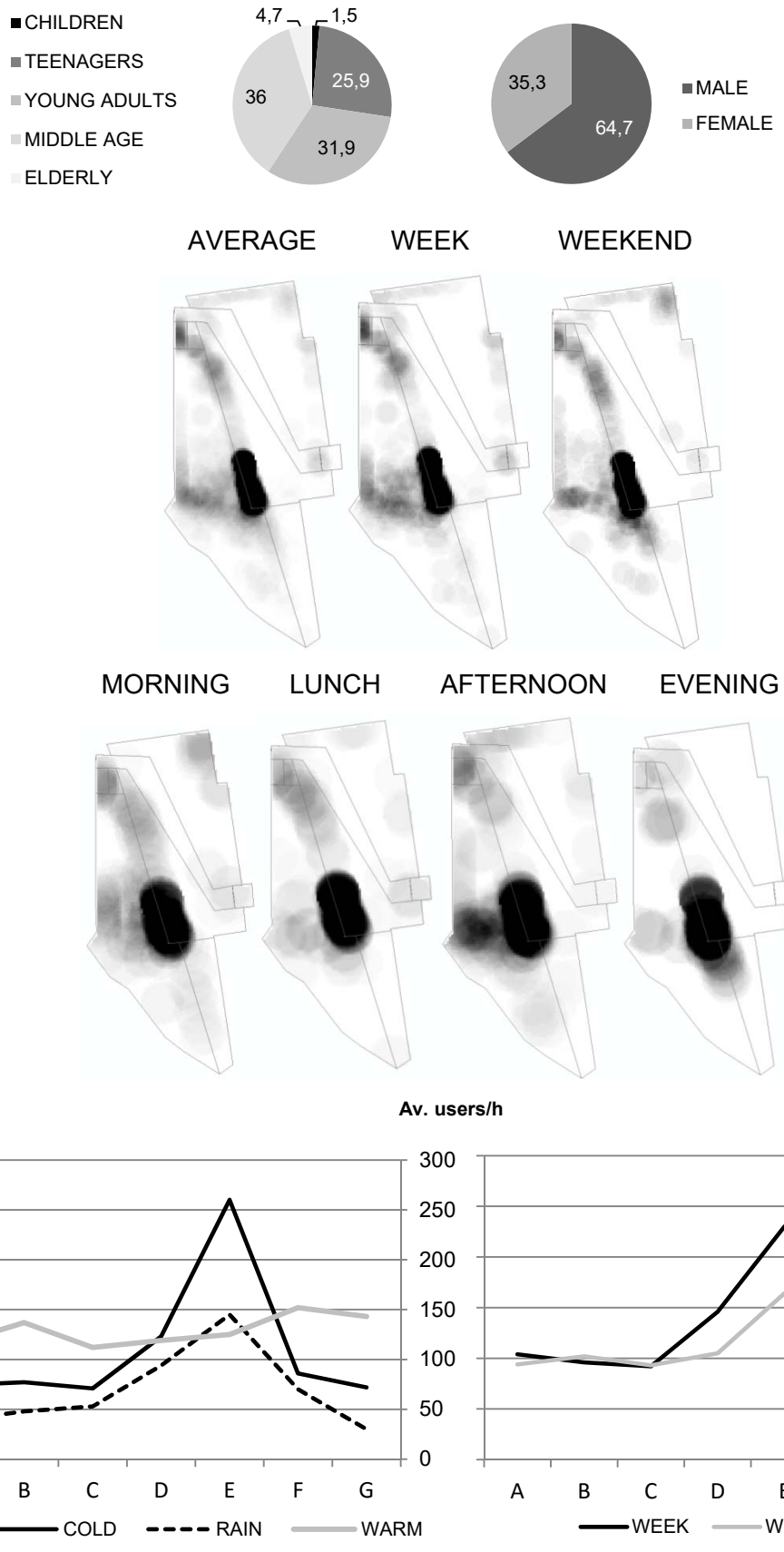


Figure 5.20 – Static usage of Trindade station Square

The majority of the results from the discriminated analysis (Figure 5.20) shows a peak at period E, with the exception of summer periods, where this occurs later at the day, as seen previously in the analysis of pedestrian traffic. Also, as expected, rainy days characterize the least used days, with users gathering near the station's entrance, where the existing weather protection turns out to be effective in providing shelter. On the other hand, the highest number of users was found on cold days rather than on summer days. This might then explain the lack of comfort experienced at Trindade station Square, amplified when high temperatures are felt. Night periods represent the least used periods in all cases but those of summer days. This might be explained by the space's suitability as a meeting point for the young residents of Porto who are headed to the city centre nightlife district. The effect of scheduled public events has a positive effect in this space's overall vitality. During summer weekend mornings, Porto City Council's promoted events effectively attract some users to the square, visible in both graphs displayed below.

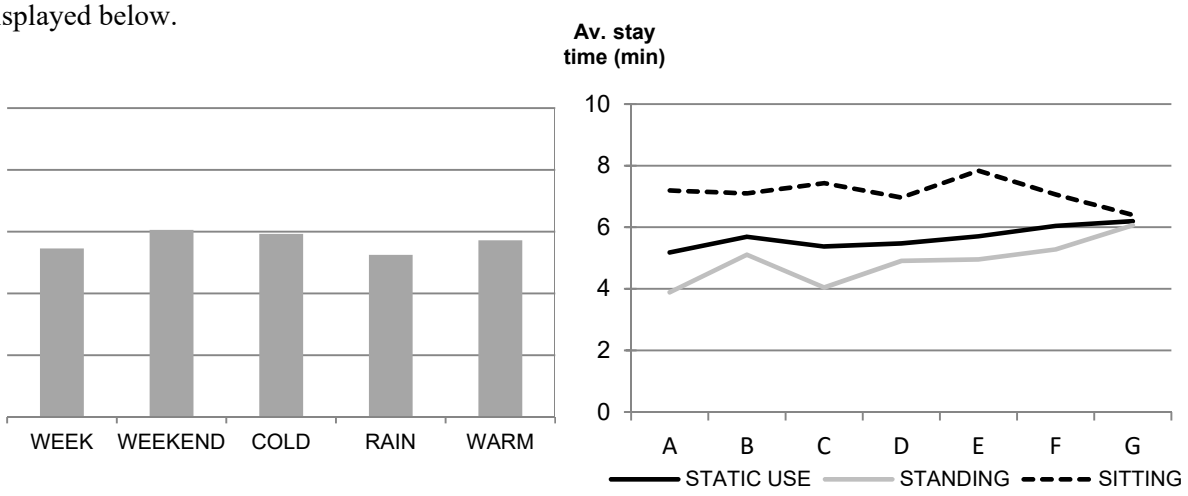


Figure 5.21 – Trindade station Square average stay periods

Stay periods for the overall combination of all static use do not fluctuate greatly across the year, with an average stay period between 5 and 6 minutes (Figure 5.21). The space's insufficient comfort conditions is the main reason explaining why average stays are clearly below the 10 minute mark. The overall consistency among weekdays and yearly seasons reinforces this fact. Trindade station Square users do not choose it for its particular features as a public space, making use of it as a sole meeting point, due to the adjacency of the metro station. The weaker frequency of the metro trains is also responsible for an average increase towards the end of the day, making users wait longer. The act of sitting show a drop in average stay periods during evening hours in comparison with the rest of the day. The lack of any formal seating locations and the insufficient lighting performance in the majority of the site are the main culprits for this phenomenon. Improvised seating locations near the station entrance are the only locations where, at evening periods, a minimum sense of safety can be achieved. Still, the lack of any relevant fluctuation shows once again the nature of uses in this public space.

5.4. D. JOÃO I SQUARE

5.4.1. PRESENTATION

D. João I Square was built in the 1940's, with the main goal of glorifying the headquarters of the new "Banco Português do Atlântico" headquarters. With a regular composition, the square is understood by many as the only formal modern square in the city centre of Porto, adopting several "aspects of monumentality, which can be connected to the regime that stood in place at the time of its construction", in the words of the architect of its most recent intervention project. Prior to this intervention, a fountain was the centre of a small 'pedestrian island', surrounded by vehicular traffic and parking. Flanking the square, cafés, bus stops, a post office, and a bank branch, generated strong pedestrian flows.

Located in the intersection of important commercial streets, most of the ground floor uses of surrounding buildings are occupied by commercial activities, while a mix of housing and offices occupy its upper levels. The city headquarters of Portuguese national bank 'Caixa Geral de Depósitos', and one of city's municipal theatres complement the range of surrounding elements of the square. The Porto 2001 European Capital of Culture project proposed a comprehensive rehabilitation effort, revamping several streets and public squares in the city centre, in order to revitalize what was at the time a decrepit city centre. The project attempted to create conditions to integrate "an offer of cultural and urban animation, injecting sociability and ludic space appropriation dynamics, easing mobility and accessibility, reverting the population decrease, expediting the housing market, and increasing the competitively of the commercial and services sectors". In a nutshell, a '"return to downtown' was intended through general improvement in well-being, by creating a space with the potential to bind and recreate identities" (Porto2001, 1999, p.3).

Square total area	4708,5 m^2
Square total perimeter	295 m
Project total blank frontage	41,5 m (14,1%)
Central section area	1745,2 m^2
Central section perimeter	174,3 m
Final total blank frontage	93,6 m (32%)

Figure 5.22 – D. João I Square project presentation

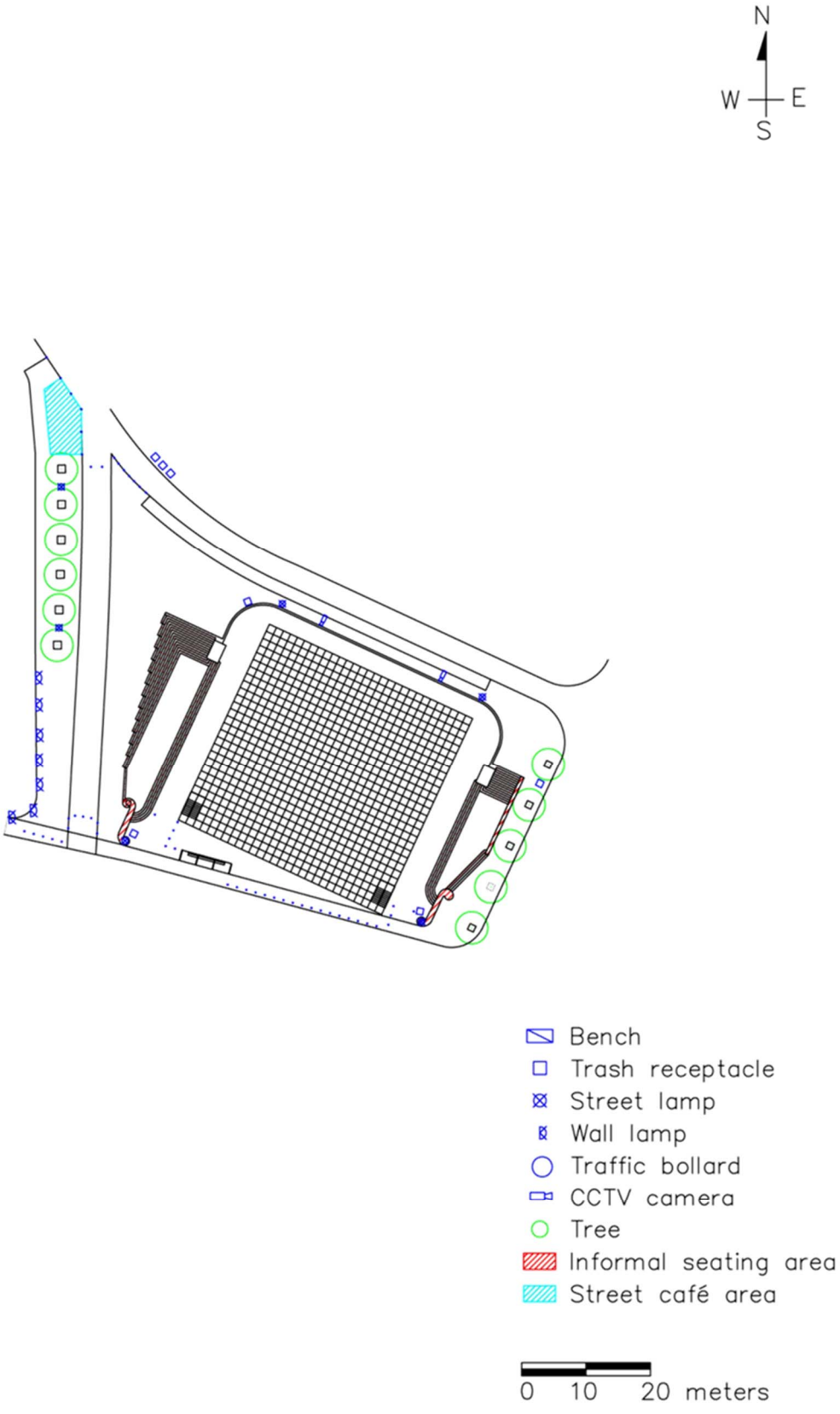


Figure 5.23 – D. João I Square design overview

5.4.2. PROJECT STAGE

The main focus for this project consisted in the maintenance of the formal structure of the square, with minor changes in order to 'reinforce its composition rhetoric'. As an intervention associated with the European Capital of Culture event, D. João I Square was included in an urban path targeted towards culture, linking two of the city's major theatres, and that would culminate in this square, with the potential to be the centre of public events. This was only achievable through the pedestrianization of its central section (Figure 5.24), which meant the removal of the existing fountain. This pedestrianization scheme would be enhanced by the natural topography of the site, sloping gradually from north to south, and by the replacement of existing ramps by steps. The focus on this new social aspect of the site would also contribute for an increased natural surveillance, improving the space's overall performance.

Figure 5.24 – Fountain previously at the centre of D. João I Square (http://scontent-b.xx.fbcdn.net/hphotos-ash3/s720x720/547386_439072122814662_1348671924_n.jpg , accessed on 16/04/2010)

Up until recently, several commercial activities occupied the basement level of the bank building, creating a strong functional link with the square's central section. At the time of project, that same space had been reutilized by the bank for archives and additional office space, eliminating the existing link. This intervention intended to restore life to this space, by the reintroduction of the former cafés, taking advantage of the newly created pedestrian surface. The space would benefit from existing bus accessibility, but would be complemented by a new tram route and an underground public parking garage, built underneath the square. A new taxi stand would also be included in the area facing the bank building. This all came from the main premise of the architects' project, stating "the city centre needs treatment, maintenance, and requalification. It needs to open itself to new uses and to densify with them. Is also needs a careful observation, a cultivated and contemporary intervention, which accepts its diversity, and preserving its unity and history".

For the main architect of the requalification project, if public space is qualified, people will mandatorily use it. This degree of qualification was sought in aspects such as the quality of pavement materials, trees, shadowing and vegetation, and other functional elements. A strong contrast was intended between the clarity of the limestone at the central section, and the darkness of the basalt at the edges. A special lighting scheme was also in the initial design, in order to properly illuminate the square and avoid the creation of 'darker' sections. These features, combined with the space's visual openness and the use of the space's natural topography would cater for the creation of a safe space.

Although the architect referred a need for a public space project to address the issue of shadowing and protection from elements, either from the sun or the rain, the existing arcades at the northern and

southern edges of the square would serve that purpose (Figure 5.25). Also, and while the space was intended to be a fully pedestrian space, an access would still need to be provided for the bank employee's garage, located at the northeastern corner. As a result, the project included a set of self-raised traffic poles allowing access to authorized vehicles.

Figure 5.25 – Existing arcade under Palácio Atlântico building

The design would also incorporate, in a limited portion of the central section, a water mirror, with the depth of a few millimetres, combined with a series of small fountains and water cannons. This would allow for the animation of the square which, due to its physical composition, would suffer the risk of becoming too 'arid' in the absence of events. The existing statues were slight repositioned, in order to optimize its scale and location with the square, as well as allowing for the creation of pedestrian entrances for the underground parking. The lighting scheme would also help to reinforce its monumentality. However, in a search for flexibility, the project did not provide any kind of additional urban furniture. Seating would therefore take place along the steps and ledges, combined with the inclusion of trash bins along the space's edges. Bicycle parking was not considered at the time, as a bicycle usage culture in the city was still far from reality.

More than a simple public square, this project included additional urban elements with distinct goals. The first would be materialized as a steel kiosk, at the northern portion of the square, destined to the promotion of events of the nearby Rivoli theatre and other cultural facilities in the city, as well as audio-visual support for artists. An object of this nature was intended to "provide a shift, in terms of definition and semantic identification of a mere urban equipment status to one closer to the definition of public art, not in the decorative sense, as a monument, but as an interventional element of public space".

Understood as an important public space in the city, architects and city authorities therefore understood this project as an opportunity to create a valuable space, suitable to appropriation by the residents of Porto, but also to be used as a meeting point and as a site for socialization. The intervention in surrounding streets, by limiting car traffic, also pointed towards an intention to increase usage in this square.

As the project involved the complete renovation of all water, sewage, and natural gas infrastructures, a comprehensive number of agents were involved during construction works. Business owners were also consulted several times during the project as long lasting construction works brought several constraints to the regular operation of their businesses. Although this project, due to its size and importance, was expected to have strong community participation, the reality showed a different scenario, as the majority of the public in these discussions was composed by people with special interest in architecture. This is

not a flaw of this particular project, but an outcome of the weak civic culture of Portuguese citizens. Most of the issues that appeared during the project were dealt with, the major one being the successive delays in the underground parking garage. The initially estimated completion date of June 25, 2000 was postponed to December 20, 2012, a delay of 18 months and almost a year after the end of the European Capital of Culture event. Although delays are prone to happen in a project of this nature, the simple fact that D. João I Square renovation works lasted through the entire year of 2001 marks a certain degree of incapacity by the Porto city council and other involved municipal authorities of dealing with all setbacks in the origin of this delay.

5.4.3. OPERATION STAGE

Although the space benefits from its central location in the urban structure of Porto, providing consistent pedestrian flows, more noticeable at early morning and lunch hours, its user population mostly consists of middle-age workers, combined with the occasional elderly who run their errands at the city centre and tourists who stop at the square for a few moments to gaze at the surrounding buildings. The physical features of the space, namely the lack of dedicated seating, reduce the possibilities of use. Stays are often not very prolonged and use is mostly focused around the improvised seating areas and the theatre building. The central section is, thus, for the most time empty. From dance, music and theatre performances, gastronomic and handicraft fairs, or youth sporting activities, D. João I sees a considerable number of programmed events throughout the year, combined with other events in nearby public spaces (Figure 5.26). The weekly old coin and note fair that has been taking place for the last 40 years in the arcades of the northern and southern adjacent buildings can make it safe to assume that public authorities in Porto value the role of D. João I Square as a focus for public life.

Figure 5.26 – Variety of events at D. João I Square

While the space possesses good accessibility conditions, an easily apprehensible physical structure, proper visual connection to and from surrounding spaces, and full inclusive design features, some elements of physical degradation are undeniably visible at every visit to this space. Porto's Council is clearly understaffed to proceed to the appropriate cleaning and removal of graffiti in all of the city's public spaces, and D. João I Square is no exception (Figure 5.27). Additional temporary bins were installed in the western portion of the square, close to the theatre entrance. However, by being understood as temporary elements and being prone to theft, they should not be included as inherent urban furniture elements of this space.

Figure 5.27 – D. João I Square signs of physical degradation

However, the architecture project was only partially completed. Although part of the machinery for the water features was, in fact, installed underneath the space's central section, this option was never materialized in the final project. Initial conversations with the bank, in order to restore the old cafés, generated optimism, but suddenly came to a halt, invalidating one of the major elements of the initial proposal. Today, the northern edge of the square remains physically and visually severed from the activity that could take place in front of it. A café on the northwestern edge of the square is the only visible consumption space. However, its location does not take advantage of the square's main physical features, nor does it contribute in a great degree to its animation (Figure 5.28).

Figure 5.28 – D. João I Square empty central section

The adopted lighting scheme, although interesting in visual terms, fails to illuminate the space properly. The architect shows strong criticism to the mayor at the time of the project, who is blamed to systematically change and distort the initial proposal. The improvised seating options are one of the features that most contribute to the space's average score regarding design features (Figure 5.29). Bicycle parking is also improvised throughout the square's traffic signals, lighting elements, and building drainage pipes. The malfunction of the traffic poles leads to constant intrusion of delivery and private vehicles of users who try to avoid the high parking charges at the underground parking. The existence, during evening periods, of the omnipresent 'arrumadores', unemployed and often

marginalized citizens who wander across the city's streets helping drivers to find parking spots and aid in their parking manoeuvres in exchange for a coin, shows that this is not a recent phenomenon.

D. João I Square's user connection classification gives us a mixed classification. While safety and freedom are considered as main attributes of this public space, the lack of opportunities for use are responsible for negative opinions regarding use adequacy, comfort, and upkeep. Whereas some users refer the generally good maintenance condition of the space, in comparison with other public spaces in the city, others express their discontent when mentioning "they do the events here and don't clean afterward". Common concerns state the need for trees, cafés, art pieces, shops, and "the fountain they took away". This can also explain the reduced number of frequent users, even though the space is located near important public institutions and large employers. The same happens with the opinions regarding surprise. Surprisingly, a high number of users show interest in a greater involvement, meaning that it could be of the interest of the council to change the mechanisms of public participation.

Figure 5.29 – Informal seating at D. João I Square

Two CCTV cameras are visible on the northern edge of the square, facing the bank entrance. Although unclear to the passing pedestrian whether they are used for space surveillance, their existence has to be factored into account. The kiosk was removed from the site, and into a different location in the city, as City authorities considered it a more suitable location. The interactive kiosk also saw a similar fate, as its deteriorating physical condition led to its malfunction. Still, free Wi-Fi, integrated in the Porto Digital citywide network allows, in the age of smartphones, users the means to access city information.

Porto City Council, through its animation company 'Porto Lazer', is very keen in promoting the space for public events, while always actively searching for interested partners, who could animate the space and bring life to the city centre. 'Porto Lazer' has indeed a very important role, not only in coordinating aspects such as event promotion, maintenance, cleaning, and security, and financial support but also in selecting the most suitable spaces for each public event. Although all major public squares in the city turned out similarly in aspects such as the colour of materials and physical configuration, a consequence of Porto's contemporary architectural language, there is a considerable level of interest in managing these in a network, by selecting the most appropriate spaces for each public event. As long as public space benefits from increased animation from these events, the city's management is open to collaboration. Communication with the society is possible, although the Portuguese planning system and Portuguese society itself have never been strong contributors, as seen previously. As for inner management, actions are taken only when severe issues are at hand. A visible example of this passivity is the constant occupation of the square by parked vehicles (Figure 5.30), with little action by the municipal police. Despite all these setbacks, and the deviation from the original project, the architect believes that this space is operating as planned, particularly when events occupy the central section.

Figure 5.30 – D. João I Square abusive parking

5.4.4. SPACE USAGE PATTERNS

Pedestrian traffic in D. João I Square was divided in seven distinct paths (Figure 5.31). Number 1 represents all north-south traffic along the space's western edge. Although pedestrian movement with similar bearing also exists across the space's opposite end, the lack of suitable street crossings shifts pedestrians to Sá da Bandeira street sidewalk. This area, however, is outside D. João I Square's central section, and therefore outside the boundaries of the analysed area.

East-west traffic is represented by pedestrian paths number two and seven. While the first represents all traffic across the central section's south edge, connecting 'Dr. Magalhães Lemos' and 'Passos Manuel' streets, the latter is located directly up the space's northern terrace. The absence of street crossings in this section of 'Sá da Bandeira' street reduces this path's appeal for pedestrians heading from the streets bordering D. João I Square's northwestern corner.

Transversal cross-traffic was represented by paths three and four. While the first measures all traffic between Sá da Bandeira street and Dr. Magalhães Lemos street, towards Aliados square, the second assesses all NW-SE and NW-E connecting traffic. Paths 5 and 6 represent traffic to and from the underground pedestrian car park, which, as the following results will show, is more representative than initially expected. Although both entrances to the car park originate from the square's central section, number five is located effectively closer to Rivoli theatre's entrance, with the potential to have a relevant influence in overall pedestrian choices.

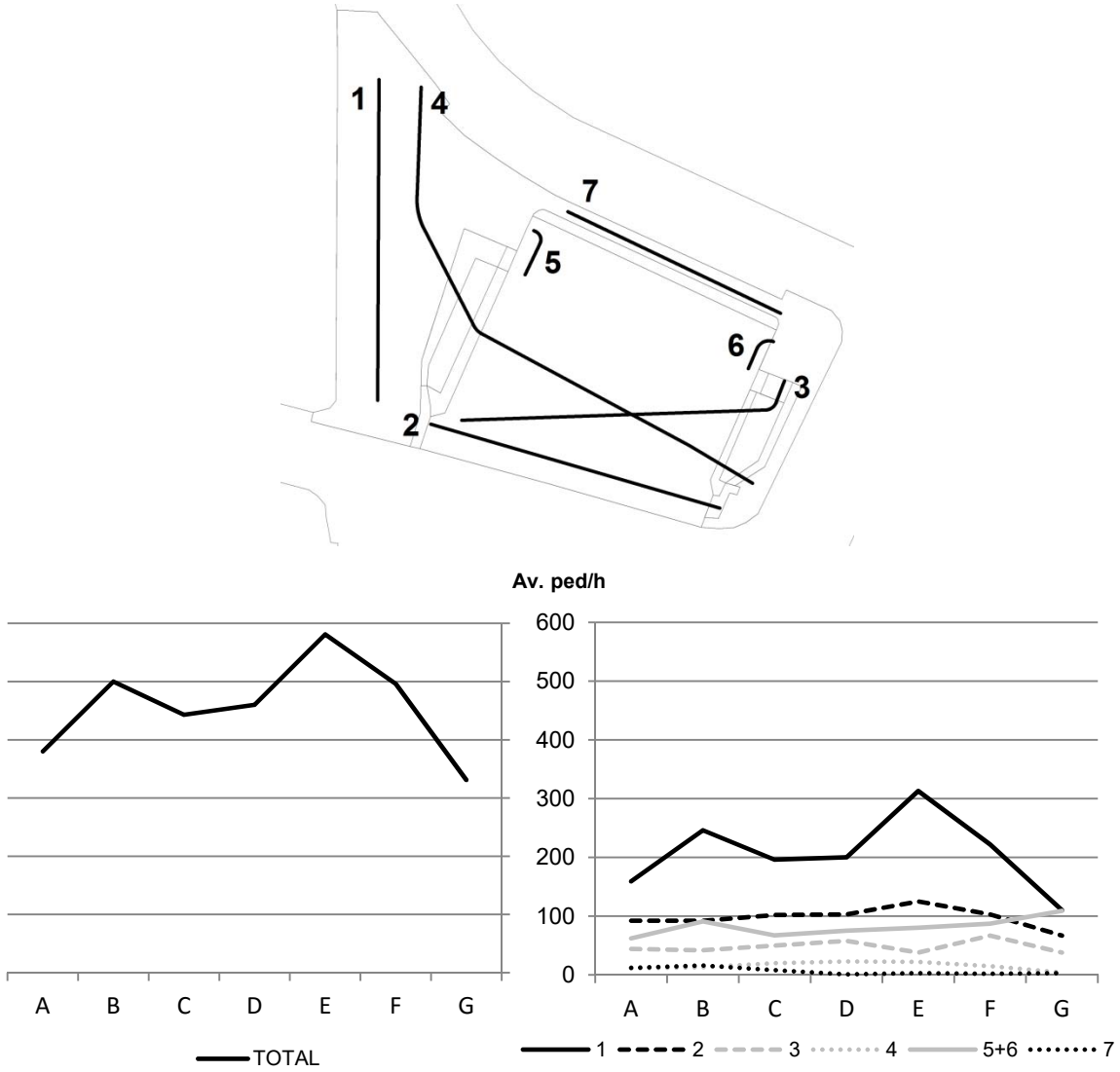


Figure 5.31 – D. João I Square average daily pedestrian flows

D. João I Square pedestrian footfall varies to some extent over the course of an average day (Figure 5.31) mid-afternoons represent, on average, the two peak daily pedestrian traffic periods, followed by an expressive decrease towards later hours of the day. While the second peak is easily justifiable as it coincides with the end of regular office work hours, the earlier one presents somewhat of a mystery, to whose cause can be attributable to hourly patterns of occasional shoppers or tourists. Also, D. João I Square's relative distance to the main city centre nightlife district, and close proximity to the main traditional shopping district, justifies the more intense pedestrian flows during daylight.

Most of the overall pedestrian traffic fluctuation can be easily explained by similar fluctuations patterns in path number one, being the most representative one. In fact, all the remaining paths present fewer fluctuations, and often a single peak during the average day, exception being made to path number three, with small peaks at lunch and late afternoon periods. Path number 2 also experiences an increase during mid-afternoons, followed by a decrease at night. Other paths can experience small rises at different periods of the day, although less significant to the overall results of the square. The paths identified by number 5 and 6, originating from the car park entrances also register an increase at night hours,

representing the influx of pedestrians headed by private automobile to the city centre seeking leisure. For ease of visualization purposes of the above graphical results, paths 5 and 6 were combined into a single line, and they both represent traffic to and from the underground car park. Although they follow similar patterns throughout the day, path number 5 represents around 60% of the total combined traffic, as it is closer to Rivoli theatre's entrance and Aliados square. Path number 7 represents overall insignificant results, with flows often below the 20 pedestrians/h mark.

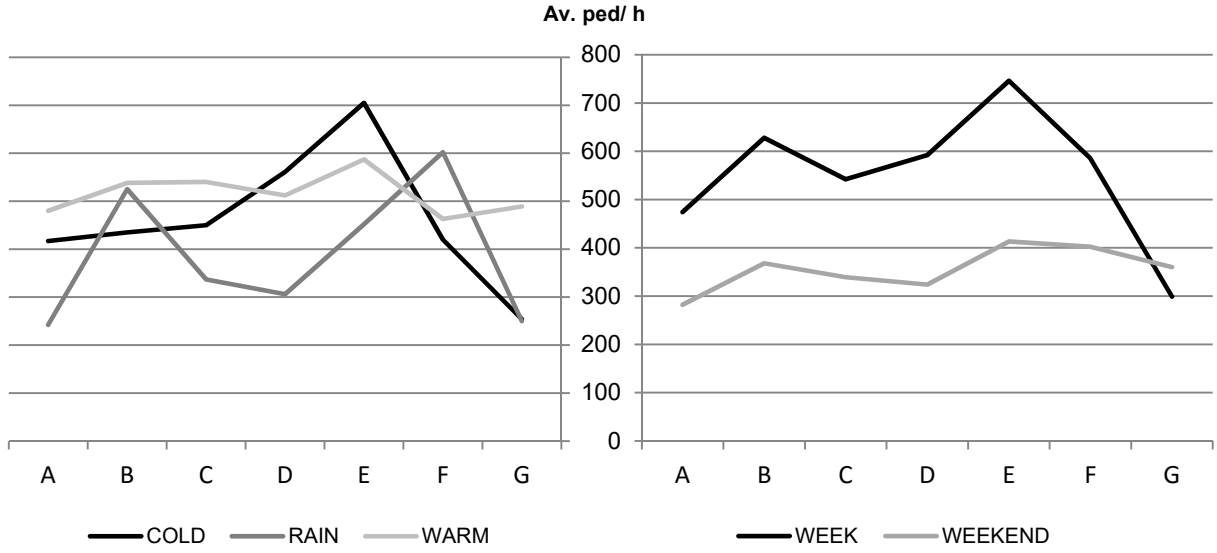


Figure 5.32 – D. João I Square average pedestrian flows discriminated

Just as with Trindade station Square, D. João I Square's pedestrian flows are largely influenced by the day of the week in question, and weather conditions. As expected, pedestrian traffic is stronger during regular working days, while also experiencing higher hourly variations. Weekends presents a much steadier pattern, with peaks during the afternoon and a considerably less pronounced decrease towards the evening. In both cases, the mid-morning and mid-afternoon peaks make their appearance. As a result, it is perfectly valid to affirm that D. João I Square is strongly embedded into nearby workers daily routines and users of Porto's city centre amenities and services.

Rainy days, with the exception of late afternoon periods, often represent the days with the smaller volumes of pedestrian traffic, as expected. This might also indicate a choice to use the adjacent arcades under the buildings that limit the north and south edges of this space, when following an east-west path. However, these areas were not assessed in this study, as they are physically separated from the square's central section. Warmer days present a more consistent pedestrian traffic, which might indicate that pedestrians stay longer in the city centre. Colder but drier days are characterized by a pronounced peak at mid-afternoons. Finally, a note has to be made regarding the pedestrian traffic values at evening periods. Days outside of summer periods present similar pedestrian traffic values, regardless of the weather conditions. As a result, a higher propensity for pedestrians to gravitate around D. João I Square can exist during summer evenings. Strolling is a quite frequent activity through the square in certain occasions, although with less incidence during weekends and summer days and inexistent during evenings. This last can most likely be explained by the lack of comfort conditions, leading pedestrians to speed up their pace, in a search for shadow and therefore including this activity into regular pedestrian traffic.

Analysing the overall use of the square, strong daily fluctuations are immediately identifiable. This is the most visible effect of the presence of the Rivoli theatre. Mornings are characterized by regular performances targeted to children, attracting dozens of young visitors to this square, thereby influencing the overall results. Similar events at evenings, this time suited for a more grown-up audience, generate a slight use increase during these periods. The motto of 'people attract people' is once again justified, identified by coincident peaks in pedestrian traffic and static use values. Towards nightly hours, a small increase is verified, which could be related to the proximity effect of Rivoli theatre. The extreme concentration of users in the space's southwestern corner, i.e. in front of the theatre, and its nearby steps, is the clearest justification for its influence. Cultural facilities, therefore, provide greater disruptions to the overall use of a public space, as the comparison with the transport infrastructure at Trindade station Square proves to be true.

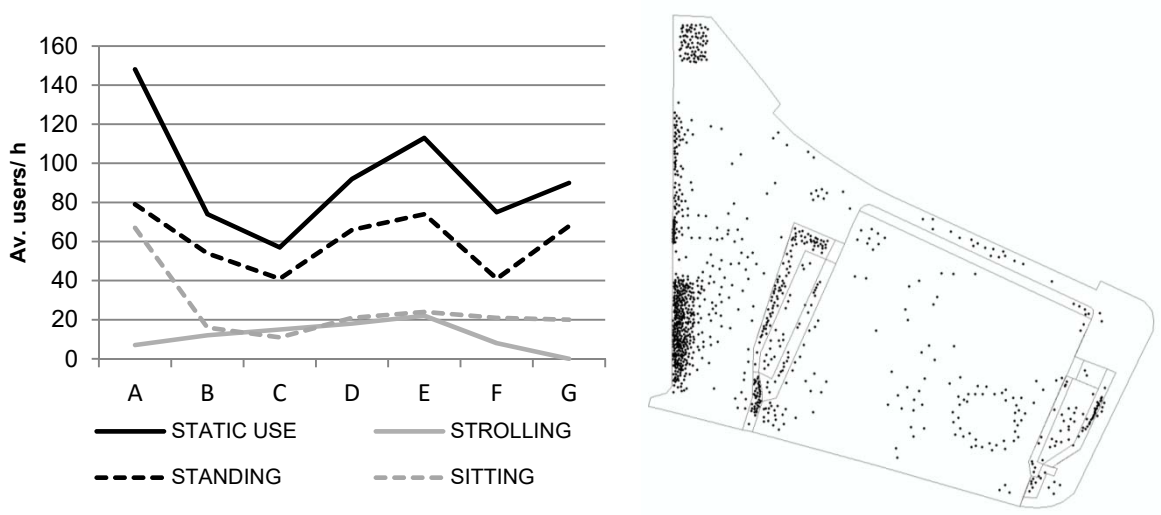


Figure 5.33 – D. João I Square usage hourly evolution and spatial distribution

As seen in the above image, D. João I Square's central section is characterized by an overall lack of use, as the use is mostly focused along the space's western edge and steps. As adjacent buildings cast shadows over the western areas of the square, while simultaneously turning the opposite side into an unpleasant place to be in, use in the daylight period is focused on the western edge. Evening periods also see a similar tendency, in this case not justified by the sun's movement but by the sheer existence of the Rivoli theatre. On the other hand, the most eastern portions of square gather the user's preference at morning hours, as Sá da Bandeira street trees often provide the only shaded areas, apart from the north and south arcades. A significant concentration is also discernible in D. João I's northwestern corner, location of the square's only street café. These facilities prove therefore useful in the attraction of users to a given public space, and represent the failed opportunity of its non-inclusion on D. João I's central section. Other elements, such as occasional art pieces fail to achieve the same effect, as is visible in the lunch patterns.

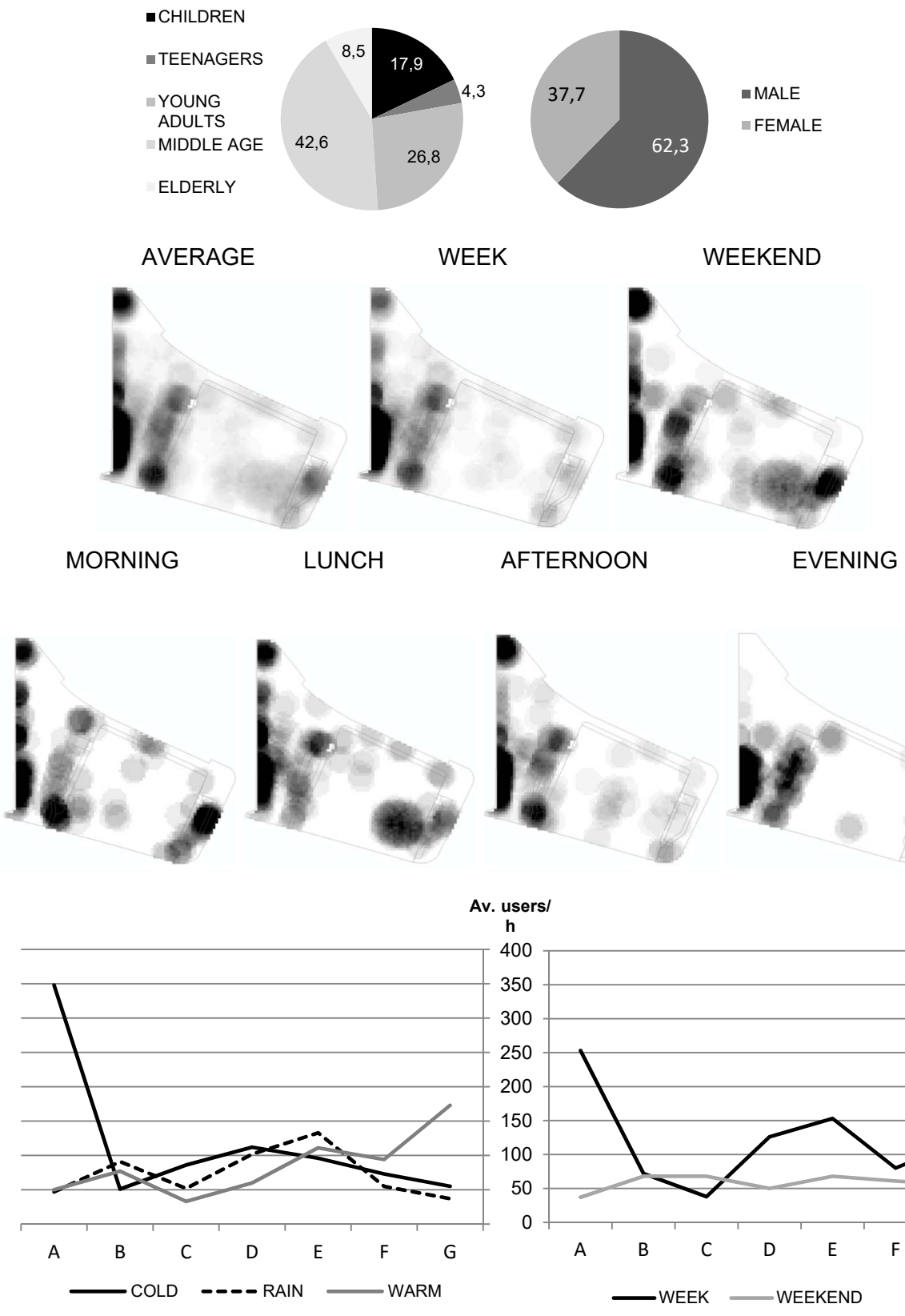


Figure 5.34 – Static usage variation of D. João I Square

Generally, all sections of the square are more used during regular working days, especially during mornings and mid-afternoons, benefitting from a steadier pattern during weekend days (Figure 5.34). However, the morning cold weather and working day results must be interpreted cautiously, as the Rivoli theatre played the most significant role in this discrepancy. Again, summer days present a growing pattern towards the end of the day

Although the ancient coin fair that takes place every Sunday could have the potential to influence this space's use patterns, the space's overall lack of comfort inhibits more intense use patterns. Despite the fact that Porto's City Council promotes outdoor sport activities, ranging from youth basketball and football tournaments to large fitness classes, during summer months, the observation periods did not span through any of these moments. However, it is important to mention their existence, as average usage numbers, especially in the square's central section would naturally increase, improving the overall performance of the square, even if for a few hours at a time.

Yearly and daily stay periods stay relatively consistent, regardless of the analysed period, averaging around 6 minutes per stay, slightly longer during evening periods and summer months (Figure 5.35). As summer observations often coincided with performance days at the Rivoli theatre, user socialization took place by either standing in front of the theatre or sitting along the space's western steps. Even though the space's provided comfort conditions are less than ideal, user stays periods are indeed longer during these periods. Even if with a minimal difference, weekends are also characterized by longer stays, as users are characterized by a more relaxed pace.

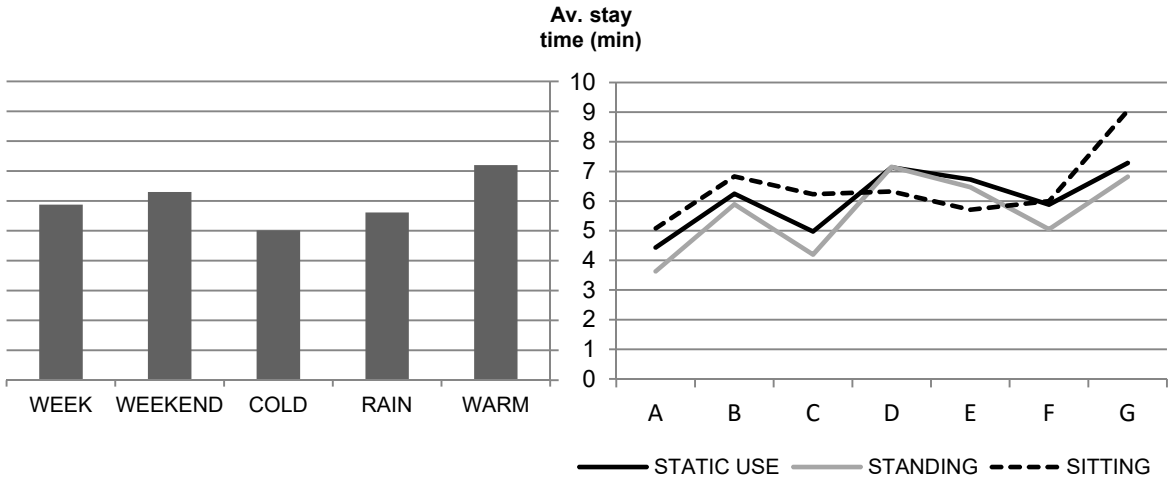


Figure 5.35 – D. João I Square average stay periods

5.5. CARDOSAS SQUARE

5.5.1. PRESENTATION

SRU PortoVivo, a public body created to encourage the urban rehabilitation of the old Porto city core, embarked on a strategy of full city block intervention. Cardosas city block, with more than 7000 square meters and 42 buildings, was one of the city's flagship city blocks under its umbrella. Located directly at the foot of Aliados square, and facing São Bento train station, this intervention was one of the most significant of the Society for Urban Rehabilitation (SRU) in the city. Due to the necessity to acquire a large amount of funding, a public-private partnership was established with Lucios, one of the country's largest construction companies, with the creation of a rehabilitation fund. During the construction stage, it would be responsible for the construction and sale of the built space, apartments, and stores. After the construction stage, the responsibilities would shift to becoming the main agent in the coordination of the intervening parties, i.e. business owners and residents. The profit coming from apartment sales and commercial space's rents was to be distributed evenly between the fund and SRU.

The key location in the city centre and the potential regarding its physical configuration and proximity to important public transport networks were seen as valuable assets in this project. However, the amalgam of heterogeneous and anaesthetic constructions constituted, at the time, a potential focus of degradation and a threat to public health and safety. A need was therefore identified for a physical reconfiguration of the inner space, by demolishing the existing secondary constructions and its replacement for newer infrastructures and facilities. This included the introduction of housing in a significant parcel of the site, combined with a large hotel, an underground parking garage in order to support these new functions, and a number of functional extensions to the adjacent Almeida Garrett square and Largo dos Lóios. The central section of the square would be occupied by an enclosed shopping area, which would double as the necessary pedestrian link. However, as the large shopping malls around the city would funnel away the potential market necessary to sustain this investment, the project moved into the creation of an open central area, in order to value the surrounding residential development.

Total public space area	1865,6 m^2
Central section area	402 m^2
Grassed area	418,3 m^2
Surrounding perimeter	295 m
Blank frontage extension (in project)	76,5 m (26%)
Blank frontage extension (during assessment)	176,4 m (60%)

Figure 5.36 – Cardosas square project presentation

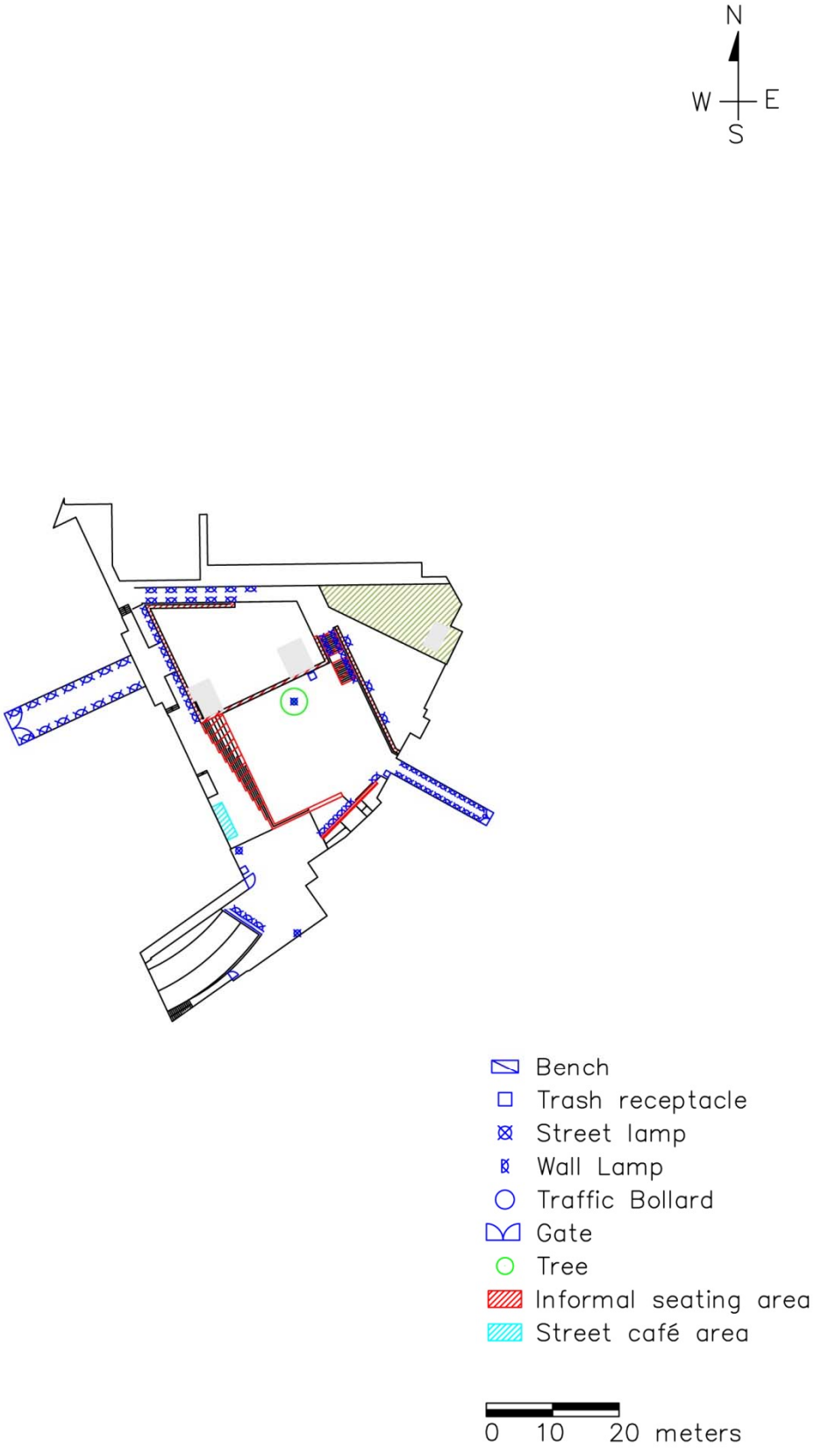


Figure 5.37 – Cardosas Square design overview

5.5.2. PROJECT STAGE

Cardosas square, from the early stages of its conception, was never understood as a traditional public space. Here, the needs of its owners were key in the definition of its quintessential features. Due to its integration in the surrounding residential development, its physical enclosure was the first aspect to take into consideration. Use restrictions could also take shape, if these would interfere with the owner's interests. However, the initial strategy would not cater for any specific restriction, beyond the obvious ones that could harm the space's physical quality.

Its prime location in the city centre was viewed by the project's owners as an opportunity to attract businesses and residents. As this square would function as an important link between the adjacent public squares, signage would be included at the entrances of the space to direct pedestrians into the space. This decision also had a commercial justification, as the majority of intervened buildings would feature ground level commercial activities, connecting to both the surrounding streets and the inner square. This central space, by featuring a large open section would be suitable for a large variety of public events, street cafés, or any other activity that would 'dignify' the space. As well as taking advantage of nearby bus stops, metro and train station, the project also included an underground public parking garage.

The strategic document for this site proposed the installation of surveillance and safety equipment of the public space, as well as urban furniture elements and trees, in coordination with the constraints of having a car park underneath. However, the final project put aside the option of video surveillance, replacing it with a set of steel gates at each pedestrian entrance, allowing for the space's physical closing, whenever the management would see fit. During those periods, the space would be only accessible to the residents, guaranteeing the safety of the space and its surrounding tenants, as well as reducing to the minimum the possibilities for vandalism acts. Still, the condominium formal agreement planned for the hiring of private security, with a special regard to the night period.

Visual quality was an important aspect to consider in the project, as its profile would suggest. This goal was achieved through the existence of a garden, water features, and an intention to provide proper maintenance. The physical connection of the surrounding commercial spaces would also work towards the reduction of the feeling of enclosure that a physical structure of this nature implies. The visual connection to the outside was reinforced by the demolition of one of the old existing buildings, creating an additional entrance point at the western edge (Figure 5.38).

Figure 5.38 – Cardosas square eastern entrance

The National Heritage Institute (IGESPAR) forced the establishment of a commitment to reinforce the history of the site. For that, along the space's eastern entrance, a series of illuminated panels would inform to the history and evolution of the site. The archaeological artefacts found during the underground parking excavation works would also be in display in one of the space's edges. The incorporation of green areas is, in the words of the space's architect, "more for visual treat than to be used for sports or games, as the small bushes work as barriers to certain uses that would cause greater wear, such as ball games". Granite was used as a prime building material, due to its strong connection to the city, creating a parallel with surrounding public spaces, but also due to its physical strength. Stone benches were incorporated in the space, complementing the ledges and steps as primary seating locations. The predicted installation of street cafés would also contribute to the overall visual quality, doubling as elements of space vitality. Interactive elements come in the form of a linear water fountain, installed in the upper edge of the site, setting the dividing line between the hotel and the square. Other elements of urban furniture, such as trash receptacles would only be present in the space's lower level, which seems inappropriate, as use would also be expected at other sections.

In the end, the fund manager valued the potential for the creation of an attractive site, "away" from the buzz of the surrounding streets and avenues, even though it could be ahead of its time in terms of Porto's traditional culture, where its residents do not value these more intimate spaces and therefore tend to use them in improper ways. "Only by instilling a new culture of public space and street commerce usage can the space achieve its intended success. Its physical structure, protected from the surrounding streets turns this space as a complement to surrounding ones, such as Aliados and surrounding public squares."

The Cardosas city block was one of the flagship projects of SRU and, as a result, was destined to become integrated into wider city revitalization strategies, targeted to attract residents and businesses to the city centre, resulting in a livelier city. By being a project developed by a private entity, the development process was entirely closed from external interventions, as the fund manager mentioned during the interview that was not aware of any process of public discussion after the approval of the Cardosas strategic document.

5.5.3. Operation stage

Although the management regime is still unclear regarding the space's operation hours, its night time closure is a given fact, situation that can be experienced daily. Due to the lack of management personnel during the assessment period, often the majority of the space's entrances were closed during early hours at weekend mornings, with the remaining gates being open by personnel in charge of the construction works. However, as it was told by one of the management representatives, this issue would be solved when the construction company is no longer at the site. This space is then a victim of its early age. Its lack of internalization into Porto's inhabitants public space usage habits, combined with the economic recession that hit the country and severely slowed investment, leads to reduced usage. Cardosas square is mostly used as a passage site, interrupted with the occasional tourists who stand for a few minutes contemplating at the architecture of the rehabilitated buildings. Most of the spaces destined for commercial activities are still waiting for its first tenants. By the end of summer of 2013, the new state of the art tourism store was still awaiting for opening, with a single restaurant being the only commercial activity on the active during the assessment period. In order to stimulate pedestrian activity through the square, the management company ended up moving its sales office to one of the vacant inner commercial units.

Construction works have also frequently closed important sections of the space throughout the observation periods, meaning that less than half of the space could be effectively used, even at peak

hours. Although this situation could change in the future, for the time being Cardosas Square is poorly classified in terms of its activity potential. Events in the square are becoming more frequent, and the monthly urban market, spanning for the entirety of each month's last weekend is becoming an important event in the city's public space dynamics. Throughout the summer of 2013 several events, including cultural exhibitions, music performance, and open-air cinema took advantage of the space's intrinsic features, namely its controlled and isolated setting (Figure 5.39).

Figure 5.39 – Events at Cardosas square

Design-wise, it is possible to find that the project was, for the most, followed thoroughly. Again, some features were not visible during the assessment period, due to calendar issues. The water fountain was for the most time kept inoperational, although tests showed that after construction works its operation would be a reality. Therefore, the historical signage and the display of the discovered ancient artefacts were regarded as the only existing interactive elements (Figure 5.40). After noticing the overall darkness of the space's central section, Cardosas square's management decided on the reinforcement of the space's lighting scheme, through the installation of new lighting fixtures at elevated locations. However, the remaining sections of site remain poorly lit, representing room for future improvement.

Although the creation of the western entrance was important to reduce the space's physical enclosure, its visual connection to the outside is still heavily restricted. In fact, from any point of the space, it is only possible to establish a visual connection to the outside in one direction. In addition, only from the upper level it is possible to fully grasp the space's physical structure, which negatively affects its inner legibility.

The lack of ability to intervene in all surrounding buildings is, in the management's opinion and even in some of its user's comments, prejudicial to the space's overall quality, although attempts will continue in order to fully execute the initial intentions. Even though Cardosas square is a privately owned space, surprisingly the majority of users classify it as a public space, despite the fact that 50% of them mentioned the possibility of some restrictions regarding use.

Figure 5.40 – Cardosas square interactive elements

The lack of 'things to do' and the space's reduced activity are responsible for a widespread opinion mentioning its inadequate use. While some users lament the delays in the construction works, "which never seem to end", others hope that the space, when completed, will gain the intended vitality. The lack of shadowing and more traditional formal seating elements is responsible for the space's weak classification in terms of user perceived comfort. Cafés, art exhibitions, trees and garden areas, and benches were understood as the main needed elements (Figure 5.41). On the other hand, safety and visual quality opinions are the two features where this space excels, primarily due to the visual quality of the surrounding rehabilitated buildings. These features are also responsible for the high classification of this space in terms of the surprise it presents to its users. Nevertheless, these users show a lack of interest in being more involved with the space's operation. Although its privately owned nature will most certainly pose a severe constraint in that direction, at least one can say that Cardosas square users believe, in some extent, in its potential.

Cardosas square will be managed as a traditional condominium, with planned meetings with the involved tenants, where issues of maintenance and general space operation will be discussed. Even though the hotel has a visible visual presence, forming the space's northern edge, it does not contribute financially to the operation of the square, as therefore will not be a part of these meetings. Staffed surveillance will be a common presence after construction works are completed. A small section of the space is currently destined for consumption space, area that is expected to increase as additional commercial activities occupy its destined locations. Wi-Fi is not available from any point in the site.

Figure 5.41 – Street café space and upper level garden

From the management agents' perspective, Cardosas square will only achieve success when all surrounding buildings are rehabilitated and all the commercial units open. Due to macroeconomic factors such as the economic crisis that severely hit Portugal, this process is most likely to take place over an extended period. As the management regrets the lack of capacity to intervene in all of the surrounding buildings, which led to the coexistence of high quality rehabilitated constructions and dilapidated buildings, for the time being, measures such as the screening of blank façades mitigate the effects of this discrepancy (Figure 5.42). In order to promote the space to the residents of the city, and encourage the sale of apartment blocks and shops, the investment fund, during the final stages of the construction, was in charge of promoting events in the square. This strategy was not strongly materialized during the first months of operation, with less than a handful of events in the first half year of operation. Although public animation frequency indeed increases, when the space's ownership passes to the hands of the condominium, there is the risk of the opposite tendency, in order to safeguard the adjacent residential function. Only time will tell the extent of this change. Due to the attempts of the management company to promote public events in the square, some communication with outer entities is bound to happen. On the other hand, it is important to remember the nature of this space, meaning that any other form of outer coordination and communication, in the shape of community participation, coordination with outer entities, and consideration regarding other nearby public spaces will most likely fall out of its operation scheme.

Figure 5.42 – Cardosas square new buildings side by side with old buildings

Beyond the creation of a new publicly accessible space, this project was, first and foremost, a rehabilitation intervention fostered by a strong public-private partnership. According to the fund's manager, this integration is essential to the harmonious and balanced development of urban space interventions, attracting residents to the city centre, as simply cannot wait for public investment to appear. The project's architect perspective, on the other hand, defends that these spaces will never replace the role of traditional public spaces, which will always be characterized by its free access and use.

5.5.4. SPACE USAGE PATTERNS

As this research accompanied the first months of operation of this space, construction works on the surrounding buildings that make part of this project often led to the closing of certain sections of the square, as already mentioned. As a result, some of the assumptions led by the further discussed analysis may not represent fully the potential of the space. However, these were constraints that could not be avoided, as the construction phase did not have a fixed deadline, and was faced with successive delays. One of the examples is the Porto and North Region interactive tourism store, which has the potential of generating intense pedestrian flows and therefore increasing the use potential of Cardosas square. Unfortunately, this study could not count with the presence of this facility.

Observations indicated the presence of six major pedestrian paths (Figure 5.43). Paths one to three measure overall crossing traffic through Cardosas square, with the first considering the use of the south western entrance and the following two the north western entrance, with a differentiation being made between users using the central section or the upper level area. Paths number four and five represent all traffic into the underground parking garage entrance and the adjacent commercial unit, respectively. Finally, path number six is identified to represent all users that enter and exit the space from the eastern entrance, being mostly representative of strolling tourists.

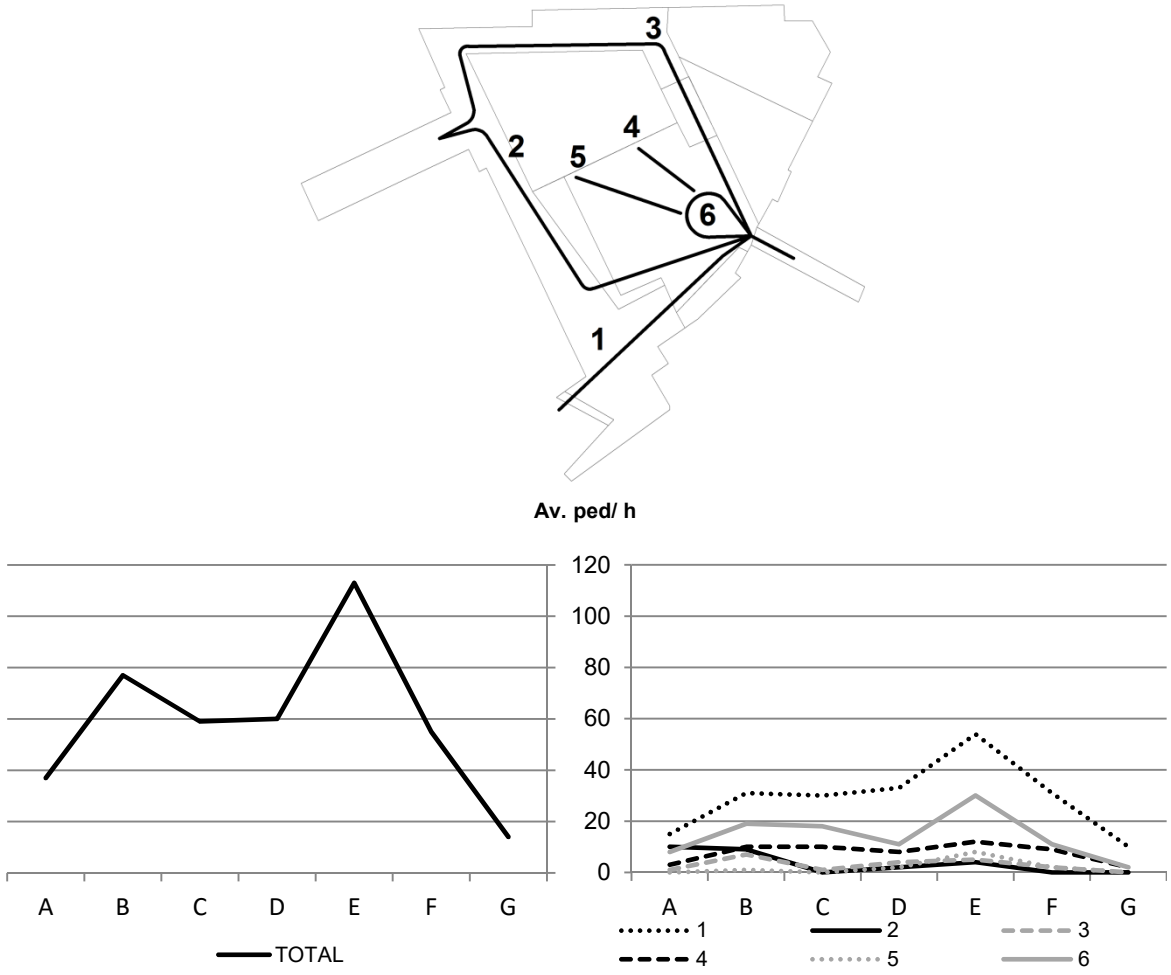


Figure 5.43 – Cardosas square average daily pedestrian flows

With only 120 pedestrians per hour at peak hours, on average, at each minute, only 2 pedestrians take advantage of the public space of Cardosas square. For a space with strong commercial pretensions, and where heavy footfall is quintessential, the results are obviously way below initial expectations. Overall, its flow pattern is classified by two major peaks, one at mid-morning, and other at mid-afternoon, followed by a significant decrease at night, where, for most of the observations, the space was closed to the public. Path number one counts for almost 50% of the total pedestrian counts. Paths two and three are not very representative of the overall results, due to its frequent closing at the account of construction works. However, under normal operation it is expected to see a more even distribution between paths number one and two. Surprisingly, path number six ranks second, showing the representativeness of occasional strollers, mainly tourist traffic in this space. Access to the car park is relatively stable throughout the day, showing the inexistence of any influence of nearby commercial activity operating hours or nightlife activity.

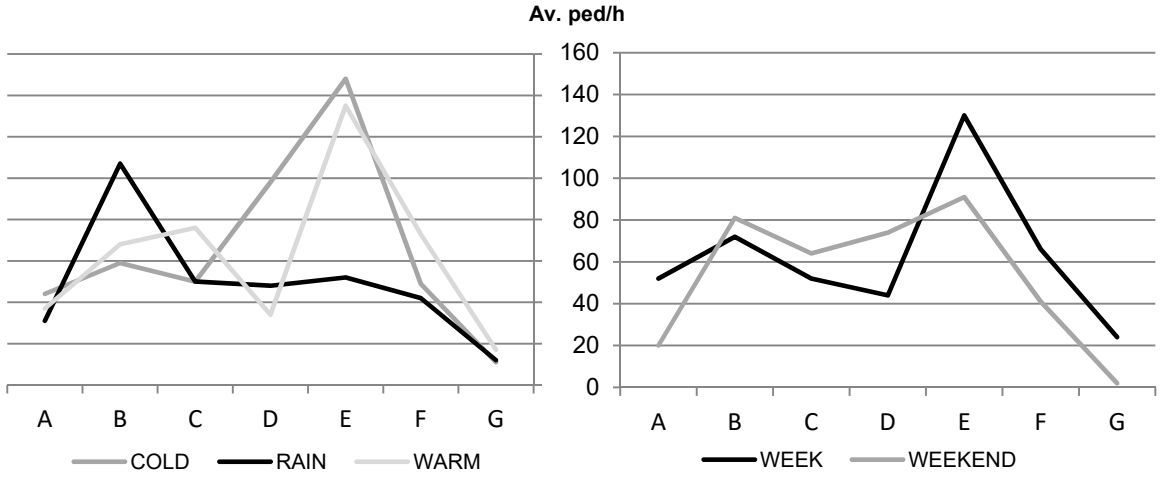


Figure 5.44 – Cardosas square daily pedestrian flows discriminated

As Figure 5.44 shows, by being a relatively recent space, pedestrian patterns are yet to be stabilized, justifying the morning peaks (period B) of rainy days or the afternoon peaks (period E) of cold and warm days. Afternoon peaks are inexistent at rainy days, but visible at either average weekend and non-weekend days, which can, once again, explain the high amount of tourists through this space. In rainy days, Cardosas square appears then to become 'invisible' under the umbrellas of Porto's tourist mass.

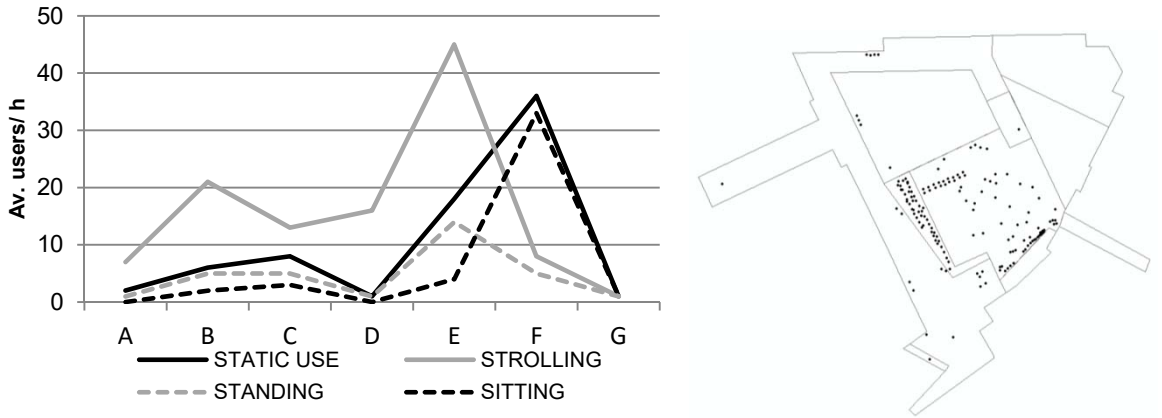


Figure 5.45 – Cardosas square spatial usage distribution and hourly evolution

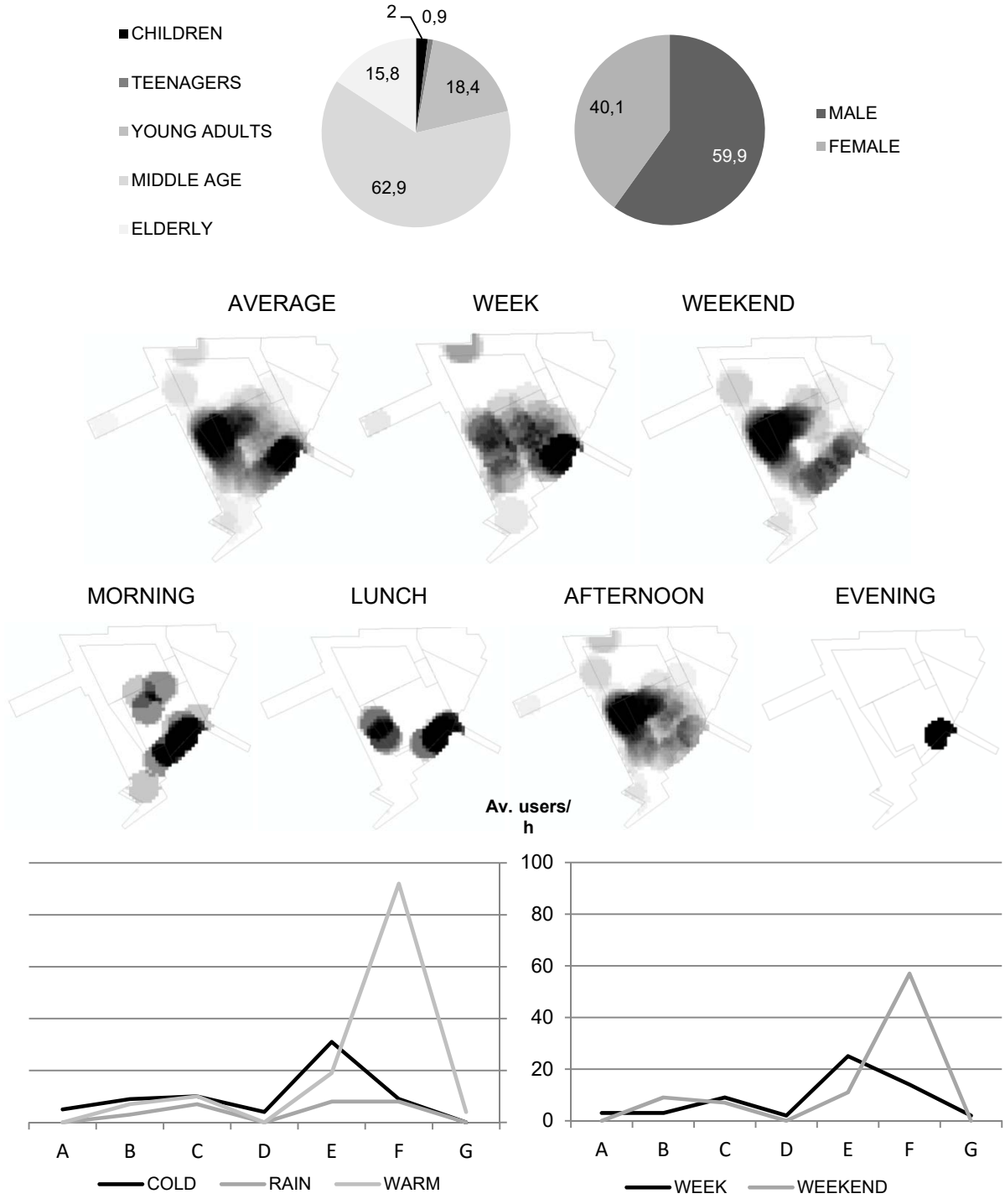


Figure 5.46 – Cardosas square static use patterns

Working days' early mornings present a higher number of users, most likely commuters heading to and from São Bento station, with weekends taking the upper hand throughout the rest of the day until mid-afternoon (Figure 5.46). Mid-afternoon and forward show the 'return' of commuters, with working days regaining the lead. Static use in Cardosas square achieves its peak at late afternoons (period F), at the expense of the act of sitting (Figure 5.45). This comes as a consequence of outdoor guitar performances, capable of attracting up to 100 users to this space simultaneously. Standing users, on the other hand, are

more frequent during mid-afternoons, matching the peak of strolling users. An abrupt reduction of user numbers at late lunch periods (period D) is visible at all levels of discrimination (Figure 5.45). The lack of cafés and restaurants, combined with the space's relative isolation can be responsible for the reduced number of users during this period. As expected, the operation schedule leads to an abrupt reduction at evening hours.

The analysis of spatial occupation patterns shows a heavy concentration at the space's central section (Figure 5.46). While during morning and lunch hours, use is mostly focused around the ledges and steps that limit this section, afternoons show a more even occupation, mostly related to the above-mentioned musical performances, even though the lack of public promotion meant that only occasional passers-by are aware of these events, and can indeed take advantage of them. Although the grassed area at the top level is presented as a quiet relaxation space, scarce in this busy area of the city, little use could be seen. This could be the result of the space's novelty factor, making it 'invisible' to the majority of nearby workers and residents, i.e. those who could use the space more often.

Weather conditions are of great influence to the number of users. As protection from the natural elements is not effective, rainy days present little to no use. On the other hand, the square's relative physical enclosure guarantees the existence of shaded areas through long periods of the day, especially during the afternoon, creating more suitable conditions for use over the hotter summer periods. The events promoted during summer days are indeed effective in creating asymmetries in this space's usage patterns. Also, the weekend monthly street fair, showcasing local products and goods, although not included in these observations, effectively attract hundreds of visitors, reinforcing weekends as the most used days of Cardosas square.

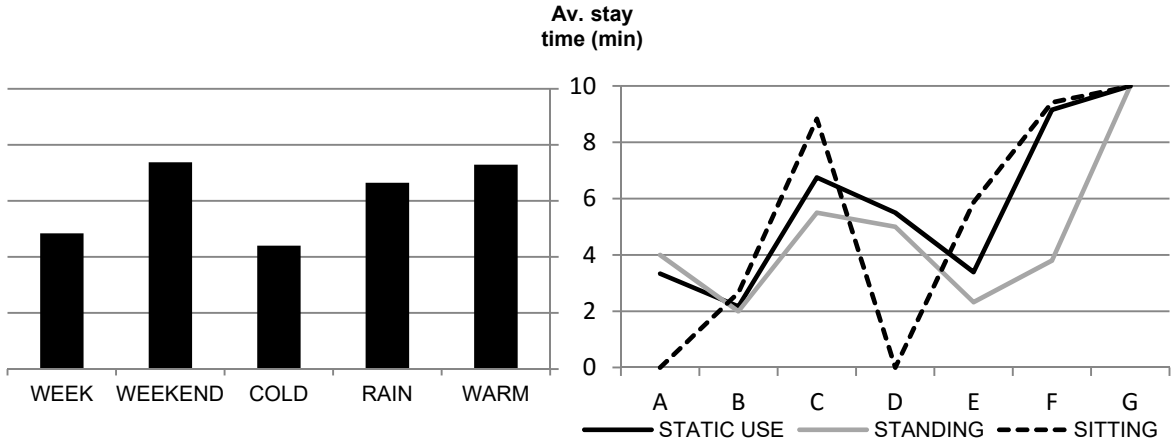


Figure 5.47 – Cardosas square average stay periods

The analysis of stay periods clearly shows the frailty of the analysis of a space with reduced usage. The permanence of a small number of users during two observations periods under worse weather conditions show that the interpretation of the results of this square must be taken cautiously (Figure 5.47). As a result, stay periods show considerable fluctuations, with lunch, late afternoons, and evening periods experiencing longer stay periods for two of the main uses of the square, namely sitting and standing. Due to this space's extremely reduced usage during evening periods, when for the most time gates restrict its access, the presence of a single user can greatly influence the average results. As a result, it is not correct to affirm that Cardosas's square stay periods are longer during evenings. It is, however, acceptable to affirm that weekend users are prone to stay longer in this space, similarly to other assessed spaces in this study.

5.6. LISBOA SQUARE

5.6.1. PRESENTATION

The history of this space is characterized by comprehensive changes in design, function, and role in the urban structure. Initially serving as an open-air market, in 1992 the site suffered its first major change, with the opening of an open-air shopping centre, Clérigos Shopping, designed to be a major attraction point, through its unique shopping offer, focused on art galleries and antiquaries. However, a lack of market interest led to a shift into a traditional shopping centre scheme. Its physical enclosure towards the surrounding streets meant it operated as a bunker. Faced with a lack of public and an inability to compete with the larger shopping centres of 100+ stores, this 22-store complex soon started to decay.

After being closed for several years, with only the underground car park in operation, Porto's SRU launched a public contest in order to reinvent it into a new cultural space. Real estate companies became interested in this project, as it was in the centre of an area in strong expansion, in terms of business activities, user attraction, and 'experiences', even though the opposite side of downtown was better served in terms of public transport, especially the Metro. Although an international idea contest was unofficially launched by an arts magazine, with several submissions, none of them was considered. An investment fund, backed by 'Braga Parques', a company specialized in underground parking concessions, presented the only valid proposal, and a company named 'UrbaClérigos' was created to take charge of all operational procedures. This proposal, characterized by a strong commercial component, had a large bookstore/library as its single tenant, creating a cultural attraction point in order to grasp part of the momentum created by Porto 2001.

Construction started in a building that would cover the entire city block, topped by an accessible wave pattern roof, in order to keep some of the urban square character. However, with the bankruptcy of this cultural tenant, the project had to return to the drawing board, since it soon was realised that no interested parties would occupy such space. As the memory of the failure of Clérigos Shopping was still in the minds of everyone, all interested tenants wanted a street facing space, which, due to the terrain's difficult topography and impositions by the heritage institute, was simply not possible. Due to the space's proximity to the classified Clérigos tower, and in order to reduce the risk of rejection by presenting an excessively bold proposal, the promoters decided to embrace minimalism. Revolving around maximum transparency, an adequate scale, and architectural rupture, this new space was renamed 'Passeio dos Clérigos', in order to reinforce the idea of rupture with the previous space and foster the creation of a new centrality.

Intervention area	5321 m^2
Street length	90 m
Street perimeter	215,1 m
Street blank frontage	25,2 m (11,7%)
Rooftop level (total area)	4522 m^2
Rooftop level (accessible area)	2920 m^2
Grassed area	2240 m^2

Figure 5.48 – Lisboa Square project presentation

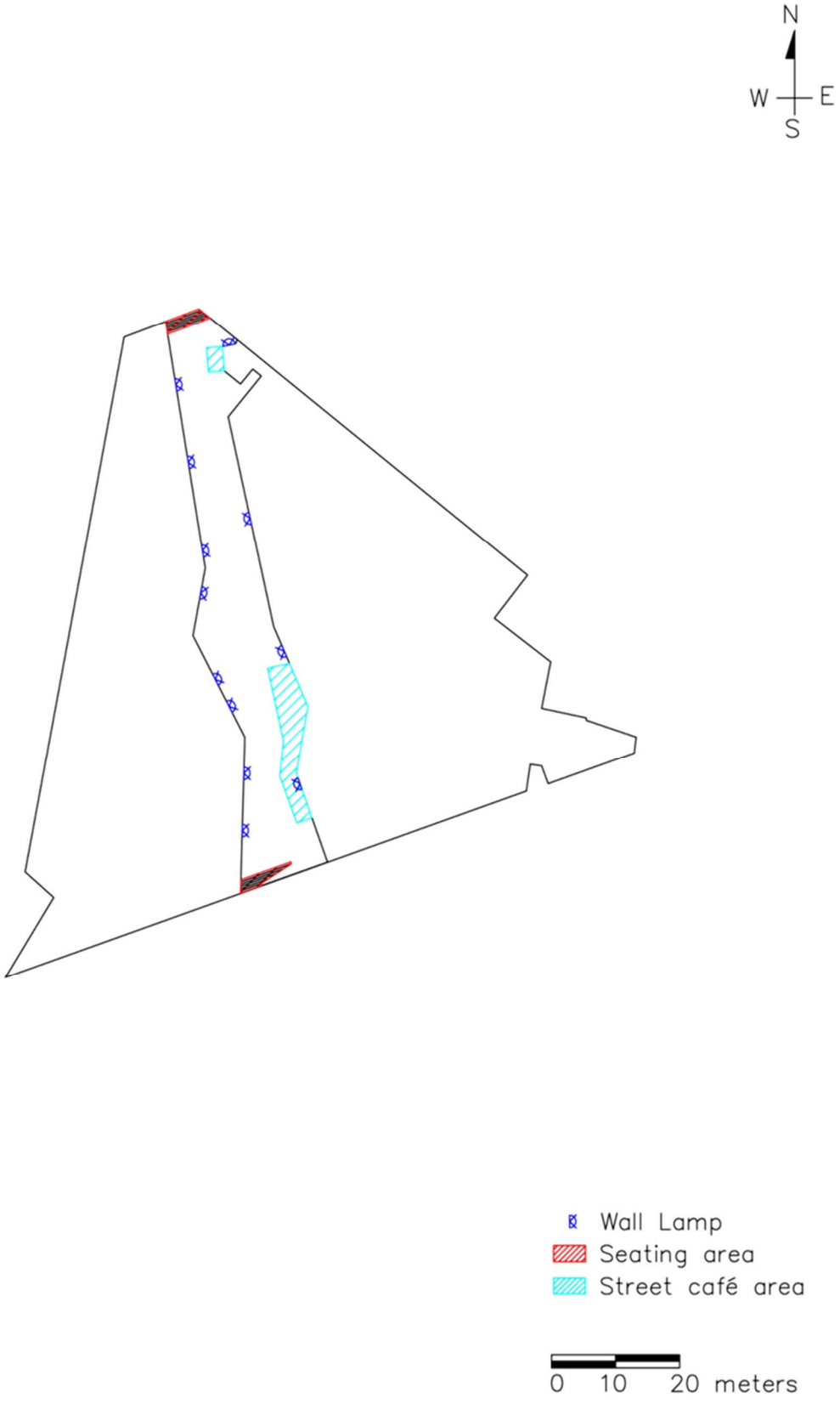


Figure 5.49 – Lisboa Square design overview

5.6.2. PROJECT STAGE

'Passeio dos Clérigos' is embedded in a philosophy which brings commercial activities together and eliminates artificial and unnecessary physical barriers, essential to the overall improvement of the city. Similarly to Trindade metro station project, this project would develop in two different levels. The new commercial street, across the lower level, designed to increase the project's transparency and creating a visible link between Clérigos Tower and Lello bookstore would generate heavy pedestrian flows (Figure 5.50). The proposed shops would then try to capture the surrounding public, with a mix of young adult and high-end shoppers. The success of the street, in terms of public acceptance and usage, was essential, to the space's real estate promoter's to gain the trust of interested business owners and future tenants, meaning that the commercialization of the entire shop frontage was therefore essential to the success of this project. Commercial activity was therefore the main goal of this project, leaving other aspects such as the creation of a set for public events to a secondary role.

The rooftop garden embarks on a distinct strategy. Although initially designed to be fully open, and remain under public management, an operation schedule would afterwards be defined, enforced by the installation of gates, and justified by similar strategies in the city's public gardens. Also, the safety risk of the architect's decision to minimize the visual impact of protection railings would be minimized if usage was restricted at night.

This private ownership scheme impacts not only its free access but also free usage. Hence, general use would be allowed, but 'stronger' activities such as public manifestations would not be permissible. As one of the management agents referred, the grass at the top level is not to be freely used, as its features have to be maintained. The same idea is defended by the space's architects, as this conditional treatment is necessary to assure the space's correct management. The space at the lower level has a seemingly free access scheme. I use the word 'seemingly' as the management regime could, in theory, divert any uses or users that could interfere with the space's natural operation. The entire space would provide full physical accessibility, although only one of the two upper level accesses would feature full inclusive design features. The project's architectural features result in an intended high visual quality, contributing to an upper quality feeling than what is normally achieved in traditional public spaces. The upper level, previously organized in a wavy configuration, evolved to create the idea of fracture, forming a canyon where the new street emerged. The decision to create a new publicly accessible space did not come from the promoters of the project, i.e. Porto's City Council, but by the architects themselves, and hence that opportunity was seized. Attempts were made in order to integrate pre-existing elements into the modern architecture, such as the eastern adjacent building, and the south edge's car park vehicular entrances, along Senhor Filipe de Nery Street. The existing statue at the southwest entrance was moved a few meters to the side in order to blend in with the architecture project. No changes were made to the underground car park, as it was integrated in a distinct concession. Bus and tram stops, available across the surrounding streets, meant that public transport accessibility did not require any action.

Figure 5.50 – Lisboa Square relation to adjacent areas

Although the first impression gives the idea of an almost completely exposed space, the lower street level has almost half of its total area covered. This was made to increase the space's attractiveness for the different businesses, but also to allow for the restaurants and bars the possibility of creating usable outdoor space, protected from the elements. The top level, according to the intentions of the project's architects, was to be fitted with urban furniture such as benches and trash bins, and although the same was proposed for the lower level, the idea to maximize the available space dictated its absence. Other elements of urban furniture and amenities were not considered, as they would be available in nearby spaces.

Forty-eight olive trees, all independently illuminated, would be placed throughout the large grassed surface, in order to remind visitors of the nearby Olive Tree square, which is not currently known by those terms. The garden and its natural thermal insulation properties would also represent significant cooling and heating costs for the space's tenants. Vehicles would not be allowed on site, and bicycle parking was seen as important.

Identified by its architects and owners as privately owned public with public usage, safety was understood as one of the major concerns of the project, and as something that would contribute to the maintenance of the space's physical upkeep. 'Passeio dos Clérigos' management authorities clearly stated this choice as "we have safety 24 hours a day and that option is decisive for the space's positioning. People feel that it has an owner". The recognition of the space's value would be achieved by its architecture and by its famous 'neighbours', namely Clérigos tower and Lello bookstore. The space's physical features would then be enough to achieve the end goal of creating a quality site, where users would feel welcome and, over time, develop a sense of pride for the space. By imposition of the national heritage institute, no new buildings could be erected above the height of the previous configuration, as they could interfere with nearby historical monuments, especially the Clérigos Tower, unless they were temporary or removable structures. A rooftop kiosk, with the appearance of a removable structure in order to circumvent this restriction was therefore proposed, in order to complement the space's features and circulation patterns (Figure 5.51). This element also helps in the definition of the space's management scheme, as will be seen in the analysis of the operation stage.

Figure 5.51 – Lisboa Square rooftop kiosk

Although under the arms of SRU, this project was developed as an isolated intervention from the wider urban revitalization scheme and the city centre and its commercial offer would suffer a much appreciated improvement. Beyond sole commercial purposes, Lisboa Square would also provide a space for Porto University Student Union, used as this entity would see fit. Public participation was absent throughout the project, although, in the words of its commercial promoter "by being a public competition, it makes it a public project". Also, "by picking an existing concept and reformulating it, without changing its function, makes it unsuitable to relevant public discussion". Nevertheless, the inefficient public participation mechanisms regarding Portuguese territorial planning were mentioned with some regret. "As a real estate producer, I think we only gain by public participation, we only gain with people who criticize, because sometimes they are right".

As the underground car park remained the property of the previous concession agent, this project proved to be a challenge in ownership and management terms, beyond the obvious architectural and engineering challenges. Intense negotiations were a constant throughout the process between interested parties, namely the architecture team and UrbaClérigos, but also with outer entities, such as SRU and City Council. Still, the most important aspect was the process is the seeking of relevant partnerships, in order to gather required funding and assure the financial success of the intervention. All efforts were made in that direction, and in the end all agents recognized that the efforts paid off.

5.6.3. OPERATION STAGE

Although the lower level opened to the public according to the original schedule, the occupation of the proposed commercial mix took almost a year, meaning that the assessment spanned different levels of commercial occupation. On the other hand, and although the rooftop garden was completed on September 2012, the decision to articulate it with the restaurant and avoid abusive user appropriation of the site, led the management to opt, at the time, for an early spring opening date, where milder weather conditions would make this space more attractive. While the space was opened a few times to mark certain special events, a disagreement with City Council regarding the definition of the possible uses and management agreement for this space postponed its opening. The garden was finally opened to the public on the 15th of September of 2013, and would operate with an opening schedule similar to the shops on the lower level, from 10am to 8pm from Sundays to Thursdays and from 10am to 9pm on Sundays and Saturdays, although this could still be subject to alteration according to the will of the

restaurant's owner. As the observations and all the analysis of the space took place from January to July 2013, the analysis of Lisboa Square will be done taking only into consideration the lower level.

Although there are no visible restrictions on use, the lack of urban furniture, apart from the seating areas allocated to the street cafés mean that uses are often restricted to strolling, window shopping, and eating/ drinking (Figure 5.52). Young adults make up for almost half of the space's users, clearly visible at late afternoons and nights, and with special regard to the 'Costa Coffee' café, which quickly became a hotspot for the city's youth population. As a result, most of this social use is, in fact, longstanding, i.e., often longer than the adopted 10 minute threshold. However, pedestrian flows are not as strong as initially expected, and few events have taken place in the space. Still, during the Christmas period, again, in a period outside the assessment calendar, UrbaClérigos assured weekend afternoon jazz performances, every Saturday and Sunday, from 4:30pm to 6pm. During the final days of the observation period, one of the commercial units was still vacant, meaning that some blank façades were still present. However, this situation would change promptly, as UrbaClérgios guaranteed a tenant for that same commercial space. For the time being, what promised to be an active space falls short of the expected results.

Figure 5.52 – Lisboa Square usage

Design-wise, the project followed the initial premises regarding the space's visual quality and access restrictions. Street furniture, however, was not installed in the roof level, meaning that the grass will naturally form the only suitable surface for seating, beyond the proposed street café section (Figure 5.53). On the lower level, apart from the designated consumption areas, the existing steps present the only suitable locations for seating. This lack of seating has immediate consequences on the space's comfort classification. Visual connection is achieved in all directions from the rooftop garden, while it is limited to two directions along the lower level. The adoption of this two level system takes its toll on the space's overall legibility, as only in some locations is possible to visually grasp the entire site.

Figure 5.53 – Lisboa Square rooftop garden

The evaluation of users' opinions is composed of a mix of classifications. As seen previously with Cardosas Square, the majority of 'Passeio dos Clérigos' users consider it as public space, even though they assume that this space does not present the same possibilities, freedom-wise, as other traditional public spaces. Security guards are often seen as the agents of these restrictions. Some users, on the other hand, refer the concentration of stores and their high profile and the prohibition of garden access as the reasons that could explain its "not so public nature". By being in a traditionally tourist location, the user base of this space is mostly composed of occasional users. This means that most of them do not consider it as a valuable space, neither show any intention to become more involved in its everyday management. Still, a high percentage of them consider the space to be properly used, well maintained and generally safe. The architecture, especially through the presence of the olive trees, is responsible for over 90% admitting they were surprised. The lack of urban furniture, mainly benches, bins, spaces for children, and public toilets, however, penalizes the comfort classifications.

In the management perspective, this space operates in the same terms as a traditional shopping centre. Every tenant pays a rent in order to cover the costs of security, utilities, and cleaning. Still, a management agreement firmed between UrbaClérigos and Porto's City Council states that the latter is entitled with all the water and electricity expenses of the garden area. The remaining costs related to maintenance and cleaning will be taken care of by the private entity. This arrangement, only firmed on the 8th of August 2013, was the explanation for the opening schedule delays. The security regime follows the premises of the original project. The existing 'Costa Coffee' branch, the first tenant of the space, took advantage of the possibility for street cafés from the start, followed soon by others. Today, three commercial units possess their own distinct consumption areas, across the commercial street. Here, users can take advantage of the existing free Wi-Fi signal provided by City Council, although not available from everywhere within the site.

By its strong connection and openness with the surrounding environment, the space can suffer the risk of becoming a mere passage site. As a result, the management is strongly open to event opportunities with the potential to improve the space's image (Figure 5.54). The idea to open one of the vacant shops for a series of workshops in areas such as cooking and flower arrangements, among others, is one of the examples of the openness of the management to new events. Although being an indoor event, and 'closed' to the general public, the large windows attract a lot of passers-by, who stand by the window, trying to figure out what is happening. According to this space's management entity "the urban management procedures and mechanisms in Portugal are inefficient and are responsible for much of the problems that are seen in Portuguese cities, and especially in Porto". The example of graffiti was mentioned. In this space, the adoption of a hydrophobic coating on the concrete structure, and a hot water pump, combined with the physical surveillance of the security guard, is responsible for the

inexistence of graffiti, in contrast with nearby buildings. A proactive attitude towards any of the space's issues is, for UrbaClérigos, key to the success of the space.

Figure 5.54 – Scheduled events at Lisboa Square (http://fbcdn-sphotos-a-a.akamaihd.net/hphotos-akfrc1/s720x720/21746_551200591563083_1269531022_n.jpg and http://fbcdn-sphotos-a-a.akamaihd.net/hphotos-ak-frc1/s720x720/21746_551200591563083_1269531022_n.jpg, assessed on 10/04/2014)

Every year, a communal meeting takes place, in order to review the yearly budget, and discuss any major flaws or problems that can hinder the space's optimal operation. This is, of course, combined with a constant channel of communication between shop owners and the management entity. As this is common procedure in every shopping mall operation scheme, one can say that this is adequate to a space of similar pretensions, as is Lisboa Square. This detains common users, i.e., the public, to participate in management meetings, or have a say in questions regarding the operation of the space, at least directly. Still, the management is aware of any appropriation routines by the space's users. For instance, one of the elements of the management team showed an interest to install a bike rack as bike users started to become more frequent in the area, using urban furniture elements to secure their vehicles. Only time will tell if this attention to detail will materialize in effective measures. Nearby business owners and local commercial associations have not been strong partners, and communication has been virtually inexistent. The only exception is the nearby church, considered from the beginning a "good neighbour", and which partnership forced Porto's City Council to change the location of a nearby street crossing in order to align it with the new pedestrian link.

The architects of Lisboa Square's project are not certain that in 10 years, this formula will still be a successful one, as the social habits are subject to change, meaning that the goal is to find and design a space that can adapt to them. This space, by being in a city with growing tourist activity, and in a central location, close to important monuments and a nightlife hub presents, right now, the potential for success. For the space's commercial promoter, the trivialization of public space is its greater enemy, meaning that "the existence of public, semi-public, private, and semi-private spaces, are essential to create the sense of hierarchy of different spaces. 'Passeio dos Clérigos' was built with private investment, and created a new attraction point, which benefited the public and the city. The architecture project was the main winner, combining a state of the art design, with a complete change in structure, and solving the previous issue of integration into the urban tissue".

5.6.4. SPACE USAGE PATTERNS

Lisboa Square's use patterns collection process was also affected by a calendar issue, following the lines of Cardosas square. In this case, bureaucratic reasons delayed the opening of the rooftop garden to a period after the fieldwork process. As a result, one of the main features of this project, and also the one that would work more effectively in the public essence of the space, was left apart from the analysis. Although it was possible to survey the space in a few occasions after its opening, in order to briefly evaluate its usage patterns potential, its inclusion would lead to the need of redoing the surveying process in all four Porto spaces, in order to evaluate each space under the same conditions. As this would seriously delay this research's effective work plan, the analysis of Passeio dos Clérigos focused exclusively on the lower level. It is important to note that this study also followed the first year of operation of this space, therefore accompanying the natural increase in pedestrian use, as retail spaces opened one by one.

As a result, only two main paths were considered (Figure 5.55). Path number one represents all use of the ground level street as a pedestrian link, while path number two presents all traffic to and from the space's commercial units, with particular regard to Costa Coffee's retail unit, the only open to the public since the beginning of the assessment period.

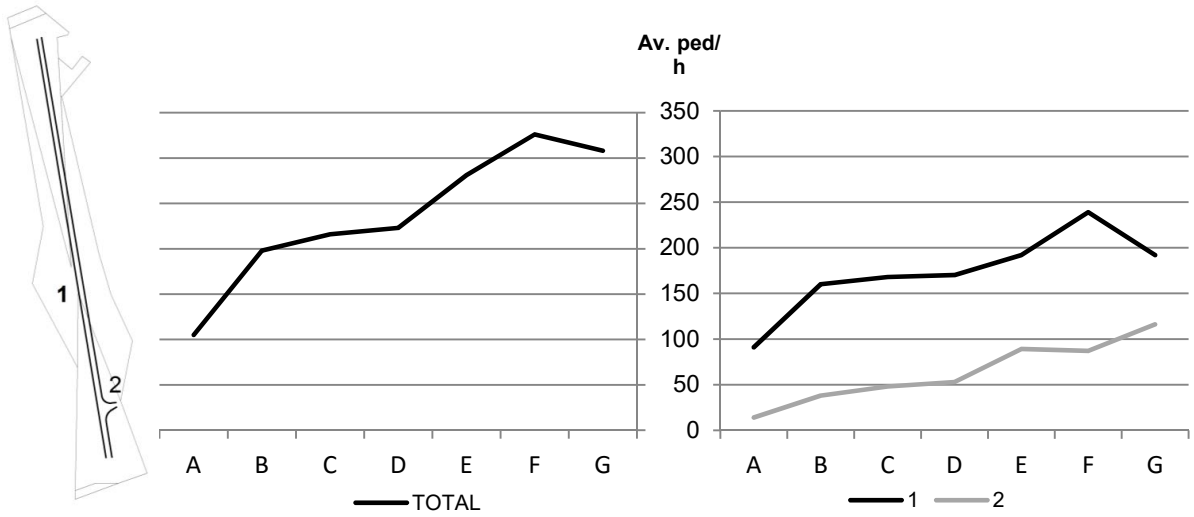


Figure 5.55 – Lisboa Square average daily pedestrian flows

The proximity effect of the city's main nightlife district has an influence in the overall number of passers-by. There is an overall increase tendency, throughout the entire day, with only a small reduction into the night period, as opposed to what was verified in the remaining assessed spaces. The influence of the city's main nightlife district is therefore clearly visible. Cross traffic, i.e. path number one, represents the most significant used route, although the difference between the two possibilities tends to decrease towards the evening. Figure 5.56 shows that, as opposed to other spaces, here weekend use is more expressive at night by a factor of two, showing the site's success among Porto's residents who head to the city centre during weekends. Surprisingly, summer days underperform days under bad weather conditions. The most plausible explanation for this fact might be related to the high number of more suitable leisure locations in the city, such as city parks, the seaside and the riverfront, with might deter users from this space with a more clear retail purpose. Also, the novelty effect that was in place at the time of the winter assessment could have attracted more users than what will be usual from here on.

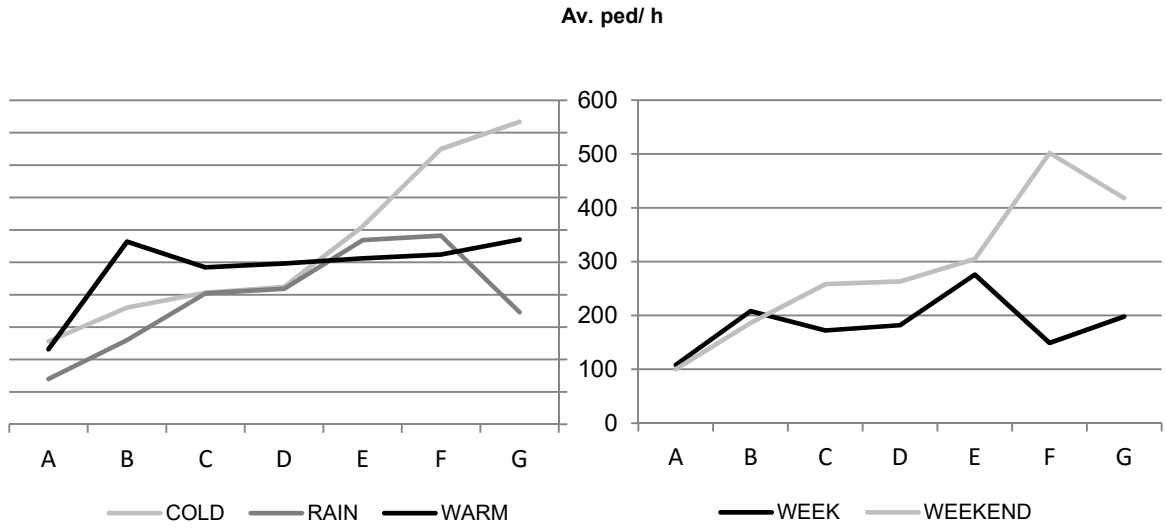


Figure 5.56 – Lisboa Square daily pedestrian flows discriminated

Lisboa Square's static use patterns present a relative steady increase over the course of the day, with minor fluctuations during late afternoon periods (Figure 5.57). The pattern is identifiable in the activity measuring food consumption patterns, with slight peaks at lunch, mid-afternoon and evening periods. This is a consequence of the space's popularity with the younger sector of the population. Again, the novelty effect is visible in the analysis of the winter observations, particularly in the category of cold days (Figure 5.58).

In this space, the inclusion of the act of strolling is important, as this space's location is effective in capturing tourists travel patterns. These types of users usually carry a more relaxed pace when visiting a foreign city in comparison with the normal fast pace of daily commuters, and are especially representative during mornings, with a peak at early lunch, followed by a steady decrease.

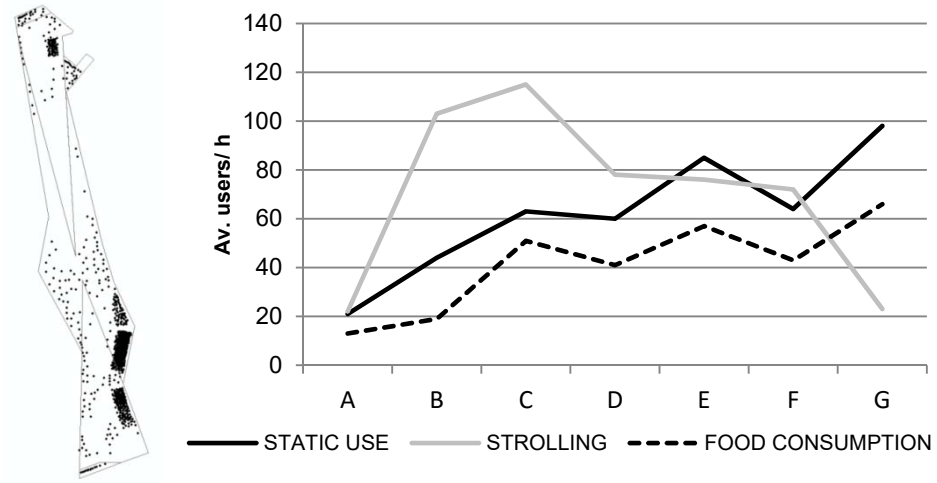


Figure 5.57 - Lisboa Square spatial usage distribution and hourly evolution

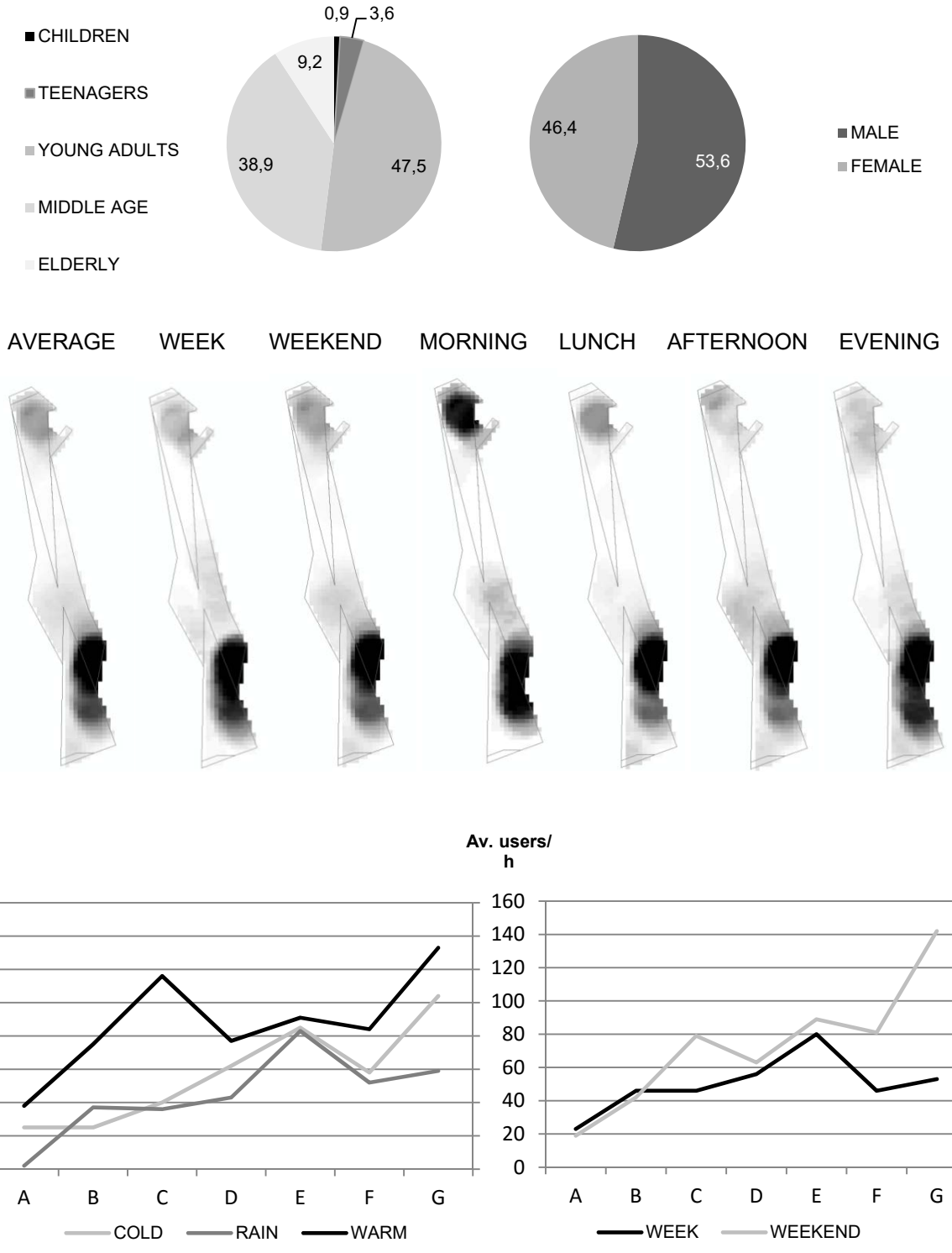


Figure 5.58 – Lisboa Square static use patterns

For the time being, users are strongly focused at the space's street café units, regardless of the day or weather conditions at the time of the assessment, as no other sections offer suitable conditions for use (Figure 5.58). A relevant point has to be made to the attraction power of the northern café unit, which, by providing standing room only is popular among morning commuters, who are keen to have their morning coffee before heading to work.

This being said, use is more intense in weekend days, something that was expected after the analysis of this space's pedestrian flows. Also, rainier days present the least number of users, although the small difference from drier winter days is a clear testament of the effectiveness of the weather proofing features. Summer days present the most popular days, especially at evening and lunch periods. The summer assessment period, characterized by a larger number of retail units open to the public, presented more food consumption choices to this space's users, and therefore, a higher capacity for attraction, especially visible during lunch hours (period C).

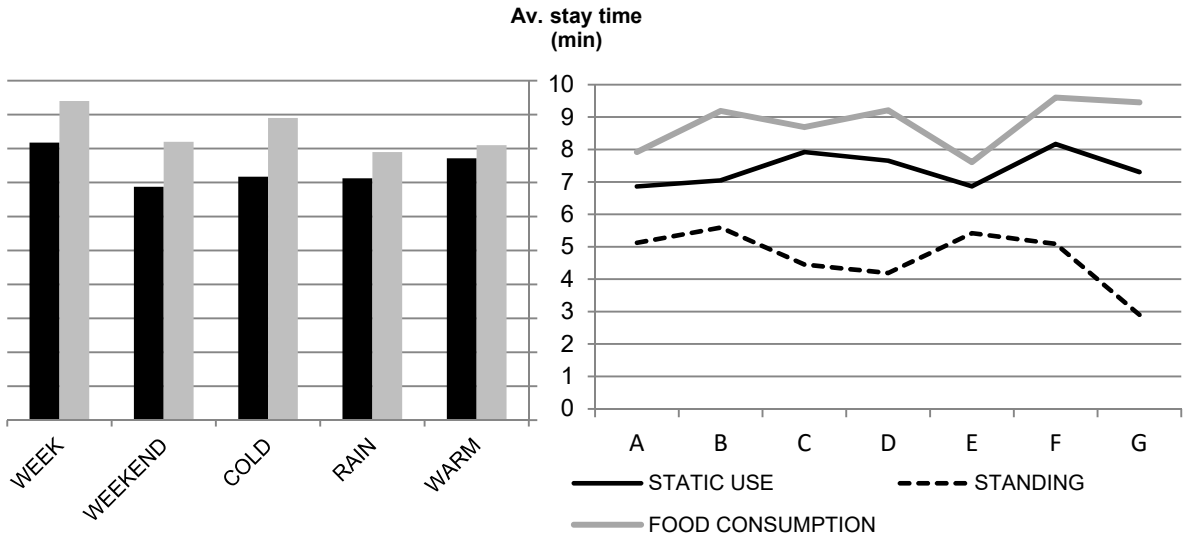


Figure 5.59 – Lisboa Square average stay periods

Average usage periods tend to reach its peak during lunch hours and late afternoon, as eating is the main static use in this space (Figure 5.59). Interestingly, on average, stay periods tend to be lower in weekend days in comparison with the remaining days of the week. This is clearly visible in the activity 'standing', with slight variations across the length of a day, ranging from 3 minutes during evening observations, to more than 5 minutes at mid-morning and mid-afternoons. When analysing food consumption separately, its duration often stays between the 8 and 9 minute mark, i.e., close to the full period of observation. In fact, the majority of the observations verified usage durations of 10 minutes, meaning that, due to the nature of the observations, each lasting the same 10 minutes, this value can, most likely, be even higher.

Finally, it is important to mention that the opening of the rooftop garden to the public will dramatically change this space's user patterns, by creating new focus for public use, but also by creating the potential to the increase of the total number of users, and create a space with more to provide than just a cup of coffee or high-end clothing shopping.

5.7. TIMES SQUARE

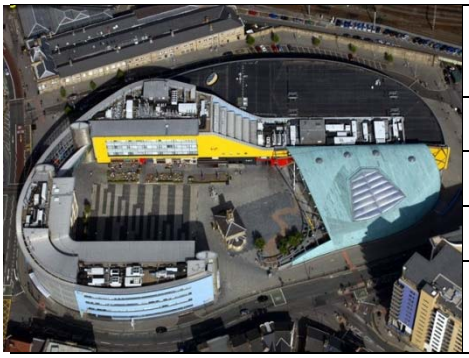
5.7.1. PRESENTATION

In 1993, the creation of the National Lottery Act established the Millennium Commission Project, with the goal of funding projects celebrating the end of the second millennium and the start of the third. Several cities saw this as an opportunity to create flagship developments, showing signs of modernity and the will to embrace the new millennium, being the Eden Project in Cornwall or the Millennium Dome in London two of the most visible developments of this strategy. In Newcastle, the Tyne and Wear Development Corporation (TWDC), created with the purpose of revamping the banks of the river Tyne, presented a Millennium Commission Project bid targeted to an underdeveloped part of the city. This project, close to Newcastle's central station, included a new square, surrounded by an International Institute of Genetics, focused on the explanation of genetics, a Wonders of the World Health Dome, dedicated to presenting the capabilities of the human body, and a National Bioscience Centre, dedicated to scientific research in molecular and cell biology. This project was then heavily targeted towards bioscience and genetics, strengthening the innovative part of the bid.

After several changes to the project in order to secure its approval, the International Centre for Life project was unveiled. This £70m project was promoted as combining "excitement, education, genetic research, ethics and commercial application on a single site", with five key objectives in mind (Pearman, 2002):

- Act as a catalyst for regeneration and repair;
- Reflect Newcastle and its local history;
- Knit the dislocated western central area of Newcastle back into the City Centre;
- Create a centre with sufficient coherence and identity to establish a new quarter;
- Maximise the use of bold colours to differentiate between the different elements of the complex.

With high regeneration hopes in perspective, in 2000, the International Centre for Life was opened to the public, seeing over 150,000 visitors in the first six months of operation.



Total intervention area	16902 m^2
Square area	6177,9 m^2
Green area	0 m^2
Square perimeter	367,2 m
Blank frontage extension	73 m (19,8%)

Figure 5.60 – Times Square project presentation

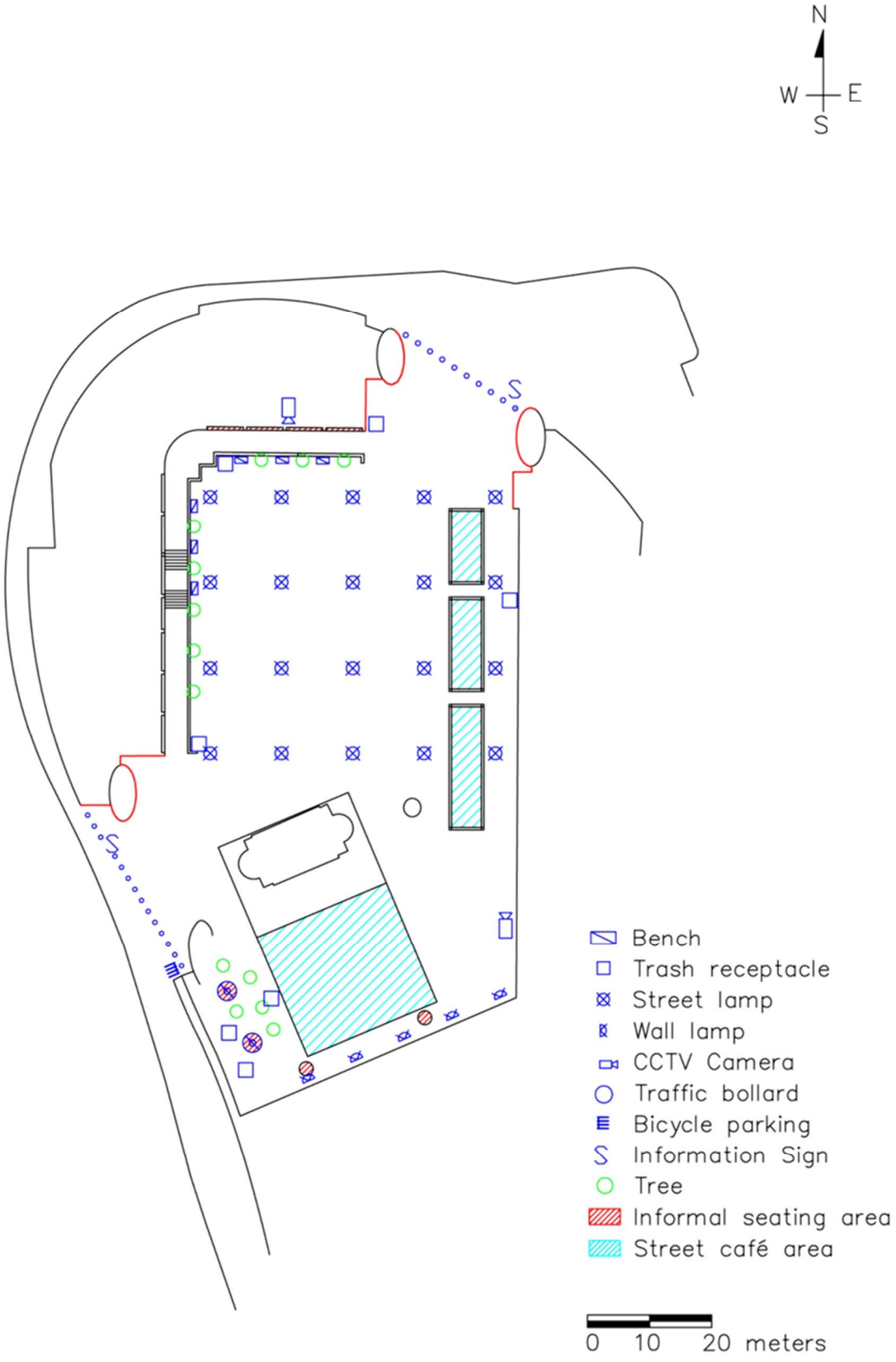


Figure 5.61 – Times Square design overview

5.7.2. PROJECT STAGE

This work's focus of attention of the complex is not a particular building, but the pedestrianized Times Square, the first major square in Newcastle for more than a century, built on the site of an ancient cattle market (Figure 5.62). Times Square was designed to work around its tenants, dignifying the entrance to the adjacent buildings. As the space was designed to work in coordination with the surrounding buildings, the creation of lively edges was an inherent element in the project. Although the current focus of this space is currently geared towards event attraction, the initial brief was different, as there was not a clear focus for the square at first. It was only when other agents started to show interest for the use of the square that the management allowed for the space to be hired.

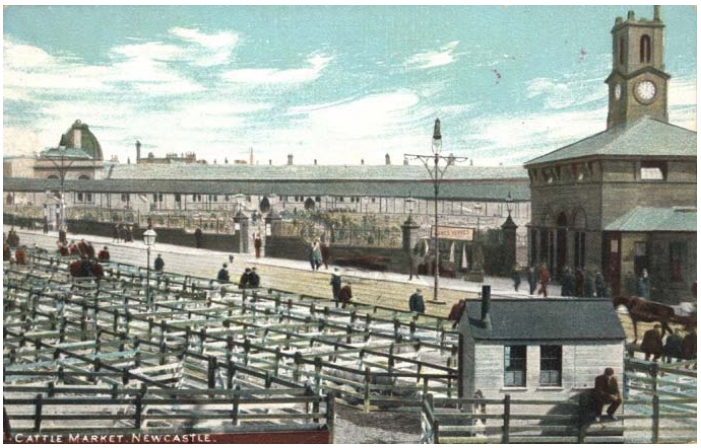


Figure 5.62 – Newcastle's former cattle market
(http://farm3.static.flickr.com/2581/4090333767_066975c6a7_o.jpg , assessed on 10/04/2014)

In order to understand the design features of Times Square itself, one must first understand the concept behind the development of the entire project. The main design idea takes as its form the embryo motif. According to the project's architect, one of main features of the project is the fact that it is not, indeed, a single building, but a set of three distinct structures: an exhibition space with an educational facility for school and universities (Centre for Life); Newcastle University's Institute of Human Genetics; and commercial laboratories/ office space (Bioscience Centre), all joined together by a central space (Times Square). A bold colour scheme was adopted for these buildings, in order to separate the different elements of the complex and reinforce its collage-like character. The project's aims were as much about urban renewal as about buildings and architecture, and the "architecture and urban planning actively promotes renewal, evolution, and development, thereby mirroring the life-giving function of the site".

Times Square is characterized by two distinct sections. The northern one, embraced by the Bio Science Centre and the Genetics Institute Building, was projected by designing its grain orthogonally. The visual openness of the site can be explained by the presence of the route of the historic Scotswood Road, a public right of way. This means that, in order to close this space, a payment fee is required, even though management authorities identify this process as "costly and timely". As a result, when the space is hired, a 2 meter wide pedestrian pathway is always left clear in order to guarantee that public right of way. This means that Times Square would only be fully closed to the general public under exceptional circumstances. In order to preserve its pedestrian permeability, the central section of the square was paved with a black and silver granite line pattern, where the diagonal path of the public right of way was clearly identifiable (Figure 5.63). In the project's brief, this would "ensure an interesting, though not over dominant 'stage set' for the various activities that will define the life of this major public square". These public routes, required to access the square but also the surrounding buildings, were designed in

order to be "continuous in terms of accessibility for all". The only exception would be the accessible alternative to the Bioscience centre, which if accessing it from the square's south entrance, would include a large detour, and not easily visible at first glance.

Figure 5.63 – Times Square's original pavement line pattern (http://photos1.blogger.com/blogger/1854/275/1600/06-01-26%20Life%20Centre%2005.jpg, accessed on 10/04/2014 and Centre for Life blueprints)

An outside firm was commissioned for the definition of landscape architecture, indicating the need for a number of urban furniture elements and its design, namely benches, trash bins, and bicycle parking facilities, in order to reinforce the space's identity. Seating was placed in order to be available at maximum 50 meter intervals along the main direction of pedestrian travel. According to the project's strategic document, an attempt was also made in order to provide cover to these seating areas in order to offer "a sheltered sunny aspect". Tree planting would be used "sparingly, but effectively, as would be appropriate in an urban context", defining some of the space's edges, but also to create informal areas south of Market Keepers House. This southern section, directly adjacent to the Life Centre building, would feature distinct pavement materials, denser tree coverage, and additional seating, with the possibility of street cafés. Other amenities, such as public toilets, would be available inside the Life Centre building.

From its concept stages, Times Square was understood and operated as a privately owned public space, even with the presence of the Scotswood Road public right of way. The change in pavement materials alongside the site's "gateways" was designed to represent this change in ownership. In its design, some premises were viewed as important. Beyond the obvious concern in creating a safe space, there was an intention to create some sort of value to the space, and to make users associate Times Square with the adjacent Centre for Life. The architecture would, therefore, respond to its context, while at the same time creating sufficient coherence and identity to establish a new quarter. Although being a completely new development, the project preserved John Dobson's historic Market Keeper's House in the centre of the square, an attempt to remind users of the former use of the site as a cattle market, and a reference to Newcastle's ever changing economic structure (Figure 5.64). The space itself would not cater for any particular necessity, as the Life Centre would be the main focus of the user experience. The TWDC projected the Life Centre as a starting point for a complete revamp of the area, which would include a new shopping centre, office development, and hotels. Inside the project's grounds, the ground level of the Bioscience Centre would be destined to house several commercial activities, "organic food shops, and similar types of retail activities, creating a distinct commercial offer". Although staffed security

would protect the inside of the surrounding buildings, Times Square would rely on CCTV surveillance to achieve the same goal.

Figure 5.64 – Market keeper's cottage at Times Square

Funding shortages were frequent, and some concerns were expressed at the time regarding the self-sustainability of the project. Only close to the finish point of the project's timeline, critical funding was obtained by the Garfield Western Foundation, which saved the project. Although public meetings, where citizens could express their concerns, were a reality throughout the development and construction process, some studies refer to little evidence of public participation at the initial design stages of the development (Whiteley, 2007). This meant that key decisions that decided the fate of the project were taken before the general public was consulted, therefore impeding the project of achieving maximum score at this level.

5.7.3. OPERATION STAGE

As in the original brief, Times Square does not present any timely restriction to its use. The square is open 24/7 and there is a quite visible shift in its uses throughout the day (Figure 5.65). While during the day, families visiting the Life Centre and workers of the surrounding buildings are the space's most prominent users, during evenings the night clubs and bars attract a younger clientele, although for the most part using the square as a passage site. According to the space management, the space is well used, and is quite a social square. A footfall of 8,000 people per day is referred by the management, including visitors to the Life Centre, people working in the complex's buildings, workers from neighbouring offices, students and people using the bars and car parks nearby. However, site surveys only allowed the identification of moderate pedestrian flows, even during peak periods.

Figure 5.65 – Times Square use at peak and off-peak periods

According to one of Newcastle's urban development team members, the Centre for Life project was one of the most successful of the Millennium ones, because it endured, and it wasn't over ambitious regarding who would actually use it. "It has sustained itself, it's not gone into financial troubles, it's got tenants, so it got that right". However, "when you actually look to the basic scale of those buildings, and then look about the level of activity, that's going on there, it just doesn't generate, you know, if you look to a route to cut cross the space, it doesn't need to be that wide". As a result, "it's quite hard to make it intimate, maybe it was over referential for the listed building, which is a lovely thing in itself, but almost as forced everything away, too far away, which doesn't help in". Only when some events occupy the central square does its size justifies.

The space's secure function makes it attractive for public events. In fact, there is a focus to generate profit from the square by promoting it as a suitable location for public events. Although, since its opening, Times Square has been the host of a wide range of events including rallies, product launches, recruitment fairs and theatre shows, these same events are sporadic, and for the majority of days Times Square is mostly used a thoroughfare. Despite this commercial aspect of the space, for a few times the management has "done things for free". This does not mean that the square can be freely used, as the reality is quite the opposite. By being a privately owned public space, there is a certain level of control regarding what can and what can't happen in the space. Smoking is the only visible use restriction, in place in the immediate vicinity of the Bio Science Centre building. In September 2004, a byelaw was in discussion, regarding the prohibition of skateboarding on the square, and as difficulties would hinder its implementation, the decision to apply it was promptly rejected.

Blank frontages are limited to the space's western edges, as all ground floor spaces on the opposite side are used. A parking garage, managed by the Life Centre team, is available in the vicinity, bus stops are located on the sidewalks close to the complex, and Newcastle Central Railway Station, providing access to trains, metro and buses, is less than 3 minutes by foot.

Most of the design features of the project are still present in Times Square. The existence of the public right of way guarantees the absence of any physical obstacles in order to access the site. Also, physical enclosure of the space is not seen as a viable alternative for the space's managers, as it would collide with the use of the square to access the main visitor attraction, the Life Centre. Although, for the most part, Times Square is a fully inclusive place, the accessible access to the BioScience centre is not easily visible, especially when the space's central section is being used for events. No restrictive urban furniture is in place, and the absence of grassed areas means the absence of desire lines. The pavement line pattern initially placed at the centre of the square is no longer part of the design, as the space's management questioned its usefulness and practicality. As a result, its replacement for the logo of the

Centre for Life, in order to make the space more visible from above, and in a time when 'Google Earth' became commonplace, was seen as a suitable change. However, the outcome was the creation of a more homogeneous and visually monotonous space that negatively contributes to the visual experience of any visitor to the site. Legibility wise, the square's performance is affected by the placement of the Market Keeper's Cottage, which inhibits a clear line of sight across the square. The physical configuration of the existing buildings, leading to only two entrance points to the square, means that visual connection to the outside is only established in these two directions. While the vision regarding the landscaping of the site was not fully included in the final project, the space concentrates a number of seating locations around its edges, used when the weather conditions are most suitable, combined with the seating provided by the ground level cafés (Figure 5.66). In the words of Tony Wyatt, "it's about getting the balance right". While trees and some shaded areas offer minimum protection from the sun and rain, the orientation of the site creates a wind tunnel effect to the prevailing southwestern crosswinds. In some occasions, especially during the colder and windier winter months, this effect is strongly felt throughout the site, and can often turn the experience quite uncomfortable.

Figure 5.66 – Times Square diversity of seating locations

While there is enough provision of elements of urban furniture such as bins and bicycle parking locations, publicly accessible toilets are only available within the Centre for Life, meaning that they are not visible from the square and open only during the Science Centre's opening times (Monday-Saturday 10am-6pm & Sunday 11am-6pm). Charles Jencks's sculpture of a DNA helix was a later addition to the project, in order to reinforce the role of the space as a science creation centre, while establishing a link between the past and the future, and representing the only interactive element in the site. Vehicle control, enacted through the existence of bollards, is also an important aspect in the management point of view. Maintenance vans are the only vehicles granted to access the space, happening on an occasional basis.

The user survey shows a number of mixed impressions. While more than 70% of Times Square's users consider it as a safe space, the presence of pubs and the wrong orientation of some of the CCTV cameras are the explanations given from the 30% of Times Square's users who expressed safety concerns. Surprisingly, 76% of the interviewed users considered the space to be of public nature. Only the opinion regarding the upkeep of the space is considered to be above average. On the other hand, users' assiduity and space value are placed closer to lower end of this interval, even though Times Square is praised by many for being the "largest public space in the city", and as a result, with unique features.

Management wise, the site contains a network of six CCTV surveillance cameras, operated 24/7 by the Centre for Life team and directly linked to the police, which, according to the site's management, is enough to control any sort of antisocial behaviour that can happen in the space. Nightclubs provide their own physical security, and when events occupy the space at nighttime, staffed security is used. As there is a concern to maintain a high level of service throughout the space, the upkeep of the square is managed by the onsite property team, dealing with the issues of cleaning and maintenance (Figure 5.67).

Sporadically, Newcastle's Business Improvement District's NE1 services are requested, such as a pavement gum removal machine. As the Chief Executive of the Centre for Life sits on the board of NE1, this channel of communication is expedited. In current operation, there is an active communication link with the police and the Council. In fact, Newcastle Council often appoints Times Square as the more suitable location for certain types of public events. In a sense, it is acceptable to affirm that Times Square is managed in network with other public spaces in the city, in certain operational aspects of interest to its management authority. The surrounding buildings also have an important role, as these can act as support for any major public event. On the other hand, the general public is left apart of ordinary management. Although there is a search for public feedback regarding what the visitors of Centre for Life would like to see, "we don't go out to seek people's opinions", there are not clear implications for the current operation of the square.

Figure 5.67 – Times Square maintenance team

The management team did not identify any major problems associated with the proper operation of the space, apart from the wind tunnel effect, and the lack of full visual connection due to the location of the Market Keepers' Cottage. Although the possibility of installing additional green elements and seating was considered, those ideas were left aside as they would reduce the possibilities for hiring the space. Activity around and across the space is also promoted by the surrounding commercial activities, due to the existence of street cafés along the space's eastern edge. In a way, Life Centre's management gained a strong focus for commercial activities in a space initially designed to be a general free to use open space, articulating the surrounding buildings. As the square is available to hire the whole year, the management is receptive to all sorts of events, although it does have a proactive approach towards that issue, as only two yearly events are, in fact, promoted by this authority, those being the Ice Rink, during the months of November and February, and the Maker Faire.

In the end, the management team of the space understood this project as a very successful urban regeneration, which was integrated by the citizens in the overall city. The TWDC was also satisfied, in functional and architectural terms, in that a very difficult and restricted brief was interpreted sensitively and imaginatively to create a scheme of Millennial quality, and the main planning objectives were reached with little harm to the overall success of the project.

5.7.4. SPACE USAGE PATTERNS

Times Square was designed to serve as a natural entrance point to Life Centre, showcasing the architecture of the surrounding buildings, while doubling as a public right of way, creating a direct path between adjacent areas. Six main pedestrian routes were identified in the analysis of this space (Figure 5.68). Paths number one and three indicate access to the main lab office building, from users heading to and from the north and south, respectively. Path number four indicates all crossing traffic through the space's main right of way. Users accessing the Life Centre from the north of Times Square follow two major distinct paths. Paths number two and six connect the space's northern entrance with the Life Centre building. While the last one represent all users using the space's wide central section, path number two measures the preference of users for the path along the space's eastern edge, while also doubling as an indicator of all users accessing ground floor commercial units along this same edge. Finally, path number five indicates all pedestrian traffic from the space's south entrance into the Life Centre building.

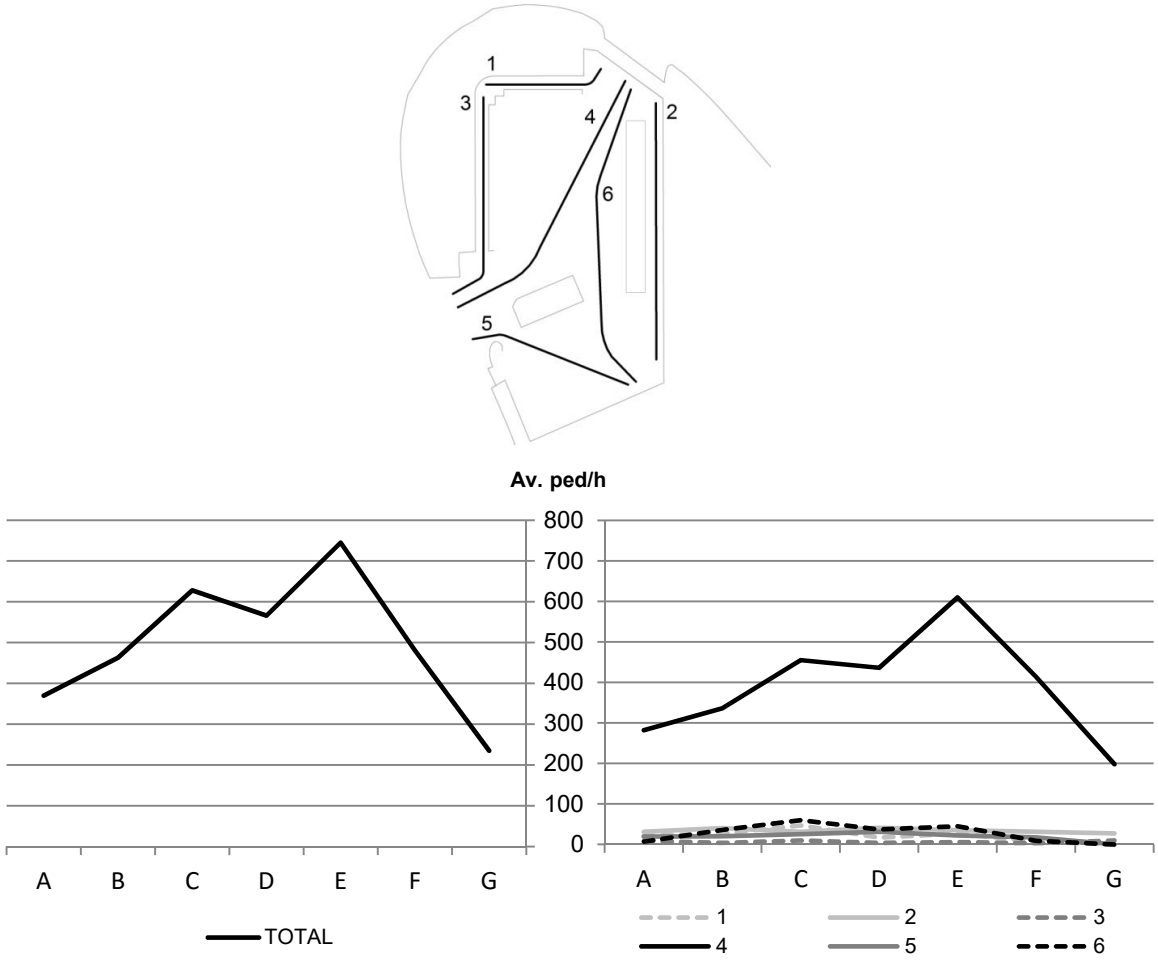


Figure 5.68 – Times Square daily average pedestrian flows

Times Square pedestrian traffic patterns are characterized by two daily peaks, at early lunch (period C) and mid-afternoon (period E), and a steady decrease following it (Figure 5.68). Located directly in the most direct route between Newcastle Central Station and Newcastle College, Times Square is the prime choice for students who need to make this trip on a daily basis. As a result, path number four combines nearly 80% of the space's total pedestrian traffic, once again reinforcing Times Square's role as an

important pedestrian thoroughfare. All remaining pedestrian traffic is clearly dependant of the adjacent facilities' operation schedule. Path number two is the only with a relatively high consistency along the course of an average day. Families and young students accessing Newcastle's Centre for Life during the day are replaced by middle age and young adults taking advantage of the space's bars.

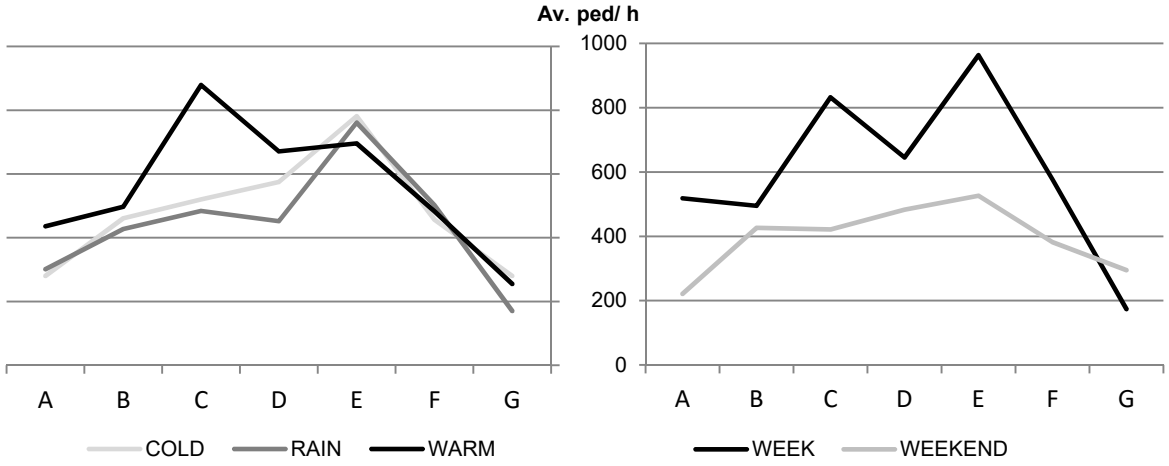


Figure 5.69 – Times Square daily pedestrian flows discriminated

Overall, pedestrian traffic is effectively more intense during weekdays (Figure 5.69). The visible differences, especially during early morning and at peak periods of lunch and mid-afternoons, are a testament of the absorption of Times Square's daily commuting habits of Newcastle's residents. Weekend evenings higher values in comparison with the remaining days of the week also demonstrate, once again, the two 'faces' of Times Square daily operation.

Discrimination between weather condition shows, as expected, the highest average value at warmer days, but only in the period between the start of the day and early afternoon. Both cold and rainy days are characterized by similar patterns, with a pronounced peak at mid-afternoon periods, although this was expected as work and school patterns are not influenced by weather conditions. One possibility for the higher values at warmer days could then be explained by a greater tourist influx to the Centre for Life building, as a consequence of a greater overall number of tourists in Newcastle.

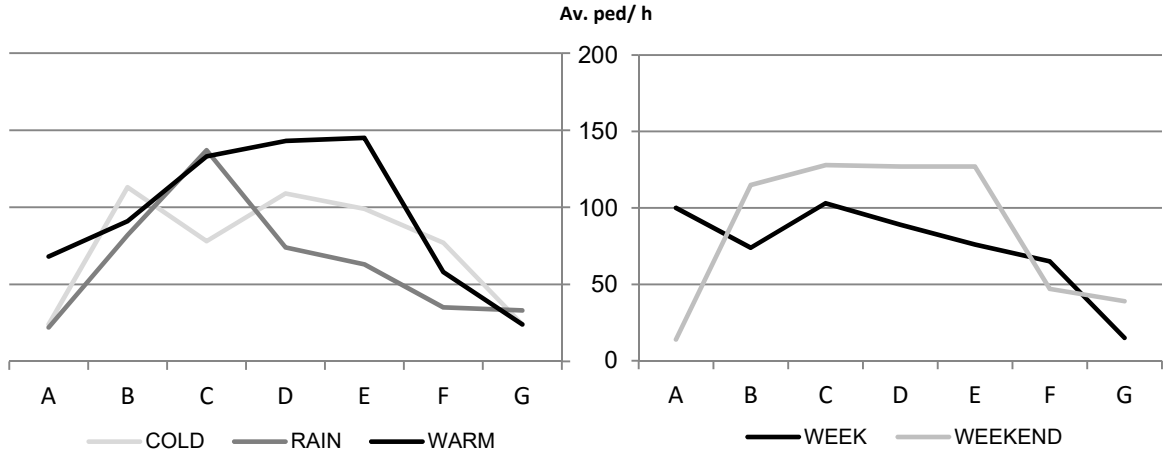


Figure 5.70 – Centre for Life access pedestrian flows

As expected, Newcastle's Centre for Life sees a higher influx of visitors during weekends, with consistent values between mid to late morning and early afternoons (Figure 5.70). On the other hand, the values registered at evening periods should be interpreted as a consequence of the pedestrian influx to Times Square's bars and night-economy facilities. For the rest of the week, school field trips, more common during morning periods, are responsible for the steady decrease across the length of the afternoon and evening. This pattern is also visible in the analysis of rainy days. When rain is inexistent, pedestrian influx is more evenly spread during the day, with overall higher values during warmer days. Although this fact might indicate that tourist activity is indeed be stronger in warmer days, the overall peak previously identified in period C is not a consequence of increase pedestrian activity to and from the Life Centre. Nearby hotels must then be the culprits for this increase.

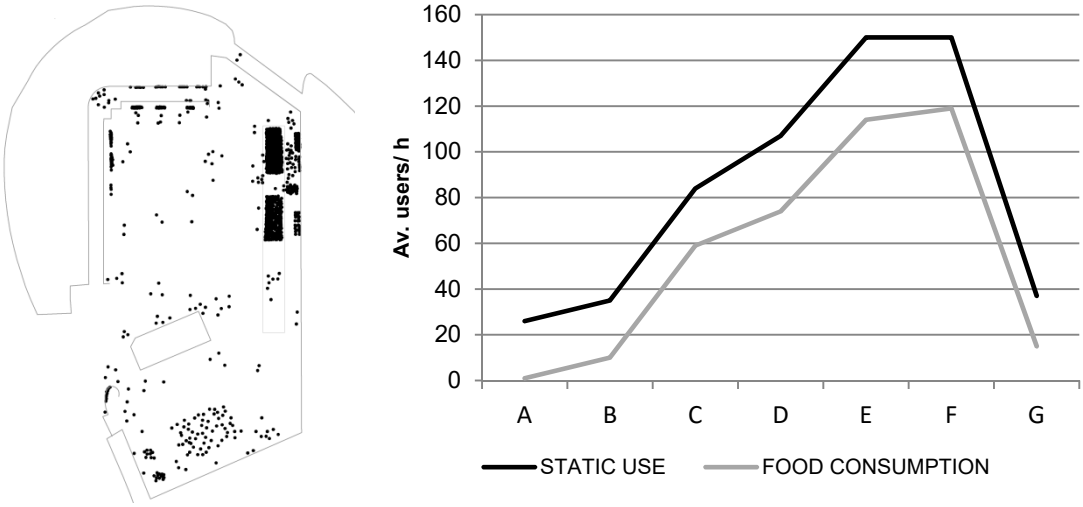


Figure 5.71 – Times Square spatial use distribution and hourly evolution

There is, however, a major discrepancy between the number of effective user and the number of passing-by pedestrians. Static use in Times Square tends to increase towards the end of the day, with its peak at the end of the afternoon (Figure 5.71). The central section, mostly used as a thoroughfare, has little relevance in the overall results for this space's usage. Although the Life Centre is the main focal point of Times Square, the bars and restaurants at the space's eastern edge are indeed the space's main attraction point, with special regard during late afternoon hours. Static usage patterns present an almost perfect match with the activity 'food consumption'. Café areas in front of the Life Centre building, and seating areas at the space's north-western edge, doubling as the space's only shaded areas, close the set of Times Square's major 'hotspots' for its users.

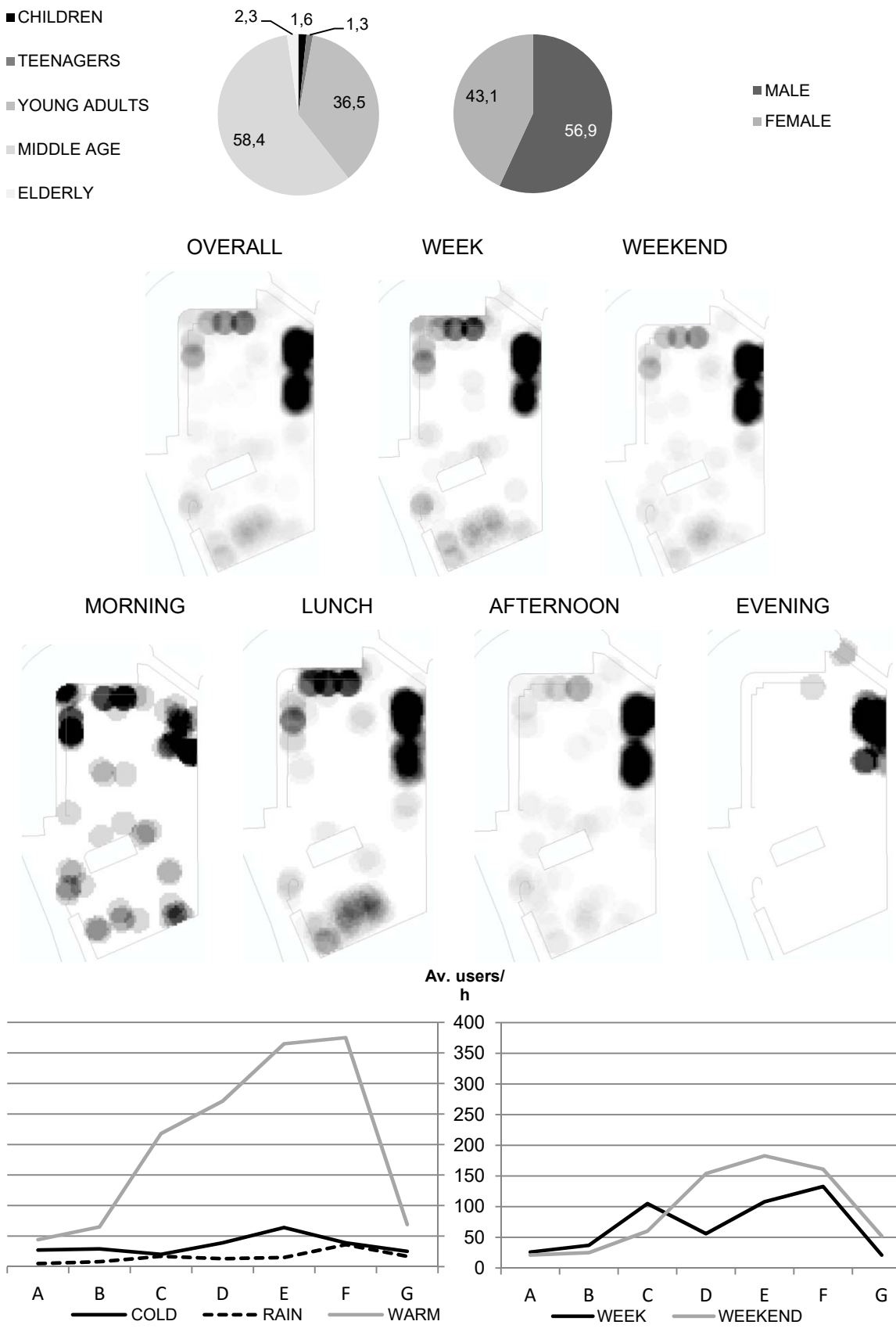


Figure 5.72 – Times Square static use patterns

During working days, Times Square users consist mostly of nearby office workers and researchers at the Bioscience Centre and Newcastle University buildings (Figure 5.72). As a result, middle aged and young adults represent almost 95% of the total sample of this space's users. Lunch periods are the clearest example of this fact. These target age groups are also the main clientele of Times Square's bars and restaurants. These café areas are indeed heavily used, only with the exception of rainy days, and with special regard to evening periods, when they represent the space's only used section.

Summer weather presents an exponential increase on the space's usage patterns, once again, due to the presence of its street cafés. Cold days present a peak at late afternoon, i.e. end of working hours, while in rainy days usage is reduced to the bare minimum. While for most part of the year, the south side of Times Square does not offer great appeal to its users, the installation of outdoor café areas in the south section of the square during the summer and spring months has, as a natural consequence, a usage increase in this section. Its proximity to the Life Centre entrance provides a natural gathering point for the families who visit this attraction. Lunch hour and late afternoons characterize working days static use patterns in Times Square, and similarly to what was verified with the analysis of pedestrian patterns, weekends show a greater number of users, especially during afternoon periods.

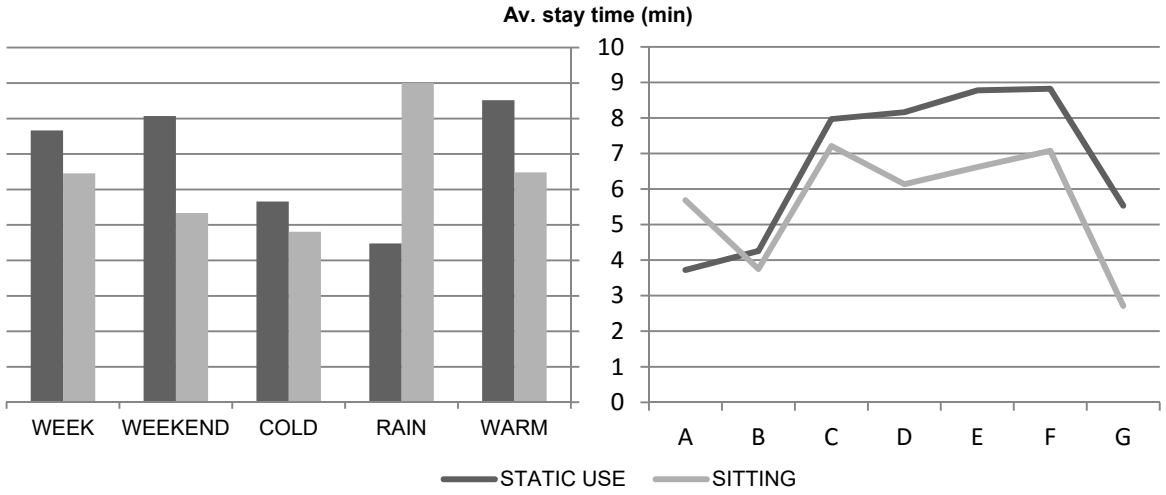


Figure 5.73 – Times Square average stay periods

Static usage average stay periods are strongly influenced by the activity 'food consumption', verified with a special consideration in Times Square's bars and restaurants, and often close to the maximum value of 10 minutes, across all observation moments. As a result, when this activity is more representative, especially at afternoon periods (E and F), stay periods will naturally increase (Figure 5.73). Still, when food consumption is not at stake, visible when assessing the activity 'sitting', similar patterns can be identified. The higher number of users in the space increase natural surveillance and therefore their propensity for longer stays. Surprisingly, rainy days present the highest overall value, influenced by the activity of a reduced number of individuals. Ignoring this outlier, warmer days present the most suitable conditions for more prolonged stays. Mid to late-mornings show the shortest stay periods, although no particular reason could be found for it. Weekend users tend to stay slightly longer, though the small difference from regular working days makes it irrelevant for further interpretation.

Times Square is therefore strongly integrated in Newcastle's leisure and nightlife economy, as its usage is therefore heavily dependent on its cafés and bars. This also justifies the space's management correct choice in its inclusion, which otherwise could have turned this space into a sole passage site.

5.8. WATERLOO SQUARE

5.8.1. PRESENTATION

The creation of St. James Boulevard in Newcastle city centre's western end led to the establishment of a number of potential development areas, in order to take advantage of the creation of this new link. Some areas, due to its size, needed a comprehensive approach. The area surrounding what is today known as Waterloo Square combined 19th century pre-Grainger housing with post-Grainger housing cleared in the 1930's and a 1940's, and was considered a leftover area, and therefore an ideal candidate for urban regeneration. Despite included in the Grainger Town Project, this area had been systematically left apart from any major urban intervention. The development of Waterloo Square started with the decision to redevelop the old Alfred Wilson House building, the same that currently houses Central Lofts, a residential building adjacent to Waterloo Square. The Grainger Town Partnership Regeneration Strategy had also identified a shortage of parking in this part of the city, justifying it as a major reason for the departure of both residents and businesses. It was then essential to provide car parking for major uses such as the Discovery Museum and the Tyne Theatre and to serve phases of this development and the wider Grainger Town area.

The Council started looking for development partners, to bring together the myriad of different land interests. Backed up by the development company London and Regional Properties, the vision of Napper Architects to combine a multi-storey car park, hotel, office buildings, and the conversion of the existing building took place. According to official planning documents, the involvement of Newcastle City Council in delivering this major scheme was to ensure that a flagship development would be created with buildings of the highest architectural quality surrounding a large central open amenity space. The final scheme included refurbishment of Alfred Wilson House for residential use, a new regional Dance Centre for Dance City, a multi storey car park, a hotel and a mixed use scheme including leisure, retail, offices and residential. The phases would then be tied together by a central public open space, Waterloo Square. As the site was divided over different owners, London and Regional bought all the surrounding parcels, in order to take on board the whole of the square and its environment. It was, in the words of Tony Wyatt, "quite a strong and simple vision". The project's architect attempted to regularize the vision of the space, as the maintenance of the building footprints was important. It was "a very strong piece of design around trying to get ground floor activity and some vitality", and "only by doing in a comprehensive way you could achieve something like this, because each of the individual owners will do their own footprint, but will not either pay or contribute unless it's part of an overall vision". Only with the idea of creating a large development could enough private funding be collected.

Square area	2900 m^2
Green area	0 m^2
Square perimeter	322,5 m
Blank frontage (project)	14,6 m (4,5%)
Blank frontage (operation)	25,6 m (8,0%)

Figure 5.74 – Waterloo Square project presentation

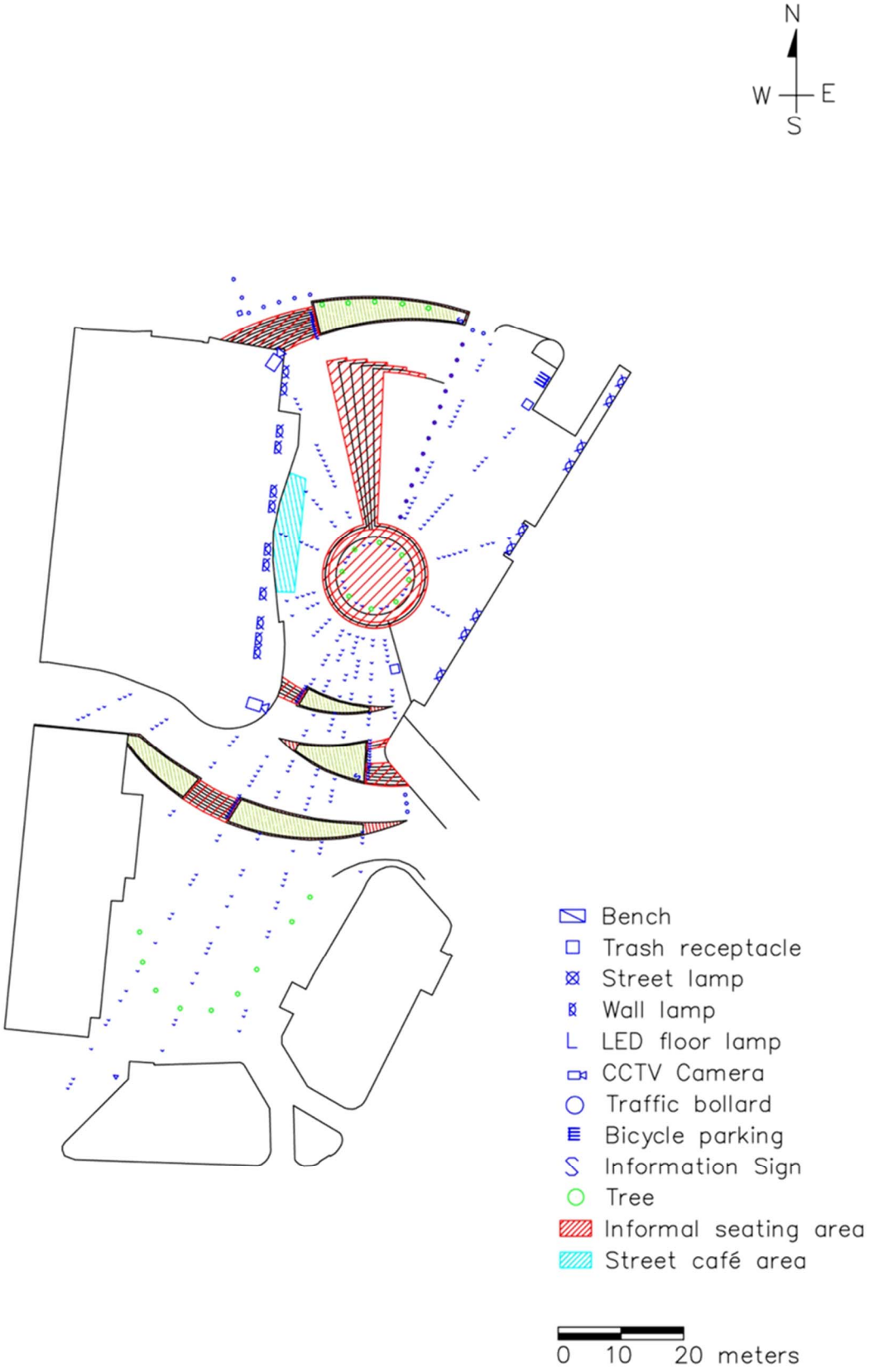


Figure 5.75 – Waterloo Square design overview

5.8.2. PROJECT STAGE

According to the project's brief, Waterloo Square would not just provide an open space associated with the Central Lofts development, but also a major new public space in the City and a link to the surrounding area, including the Discovery Museum, the International Centre for Life, the Tyne Theatre, Central Station, and Newcastle College. All this combined would generate, in theory, heavy pedestrian footfall that would contribute to the natural animation of the space. In order to fulfil that role, 24/7 access would be granted, and, in par with other public spaces in the city, no additional site-specific restrictions were expected to be in place. The physical space of the square was expected to be complemented by lively ground floor uses, including restaurants, bars, leisure, and other retail amenities, reinforcing the vibrancy and vitality of the mixed use scheme and this part of the city. Although there was not a clear purpose to create a space that could be used for events, but just a space that could be used socially, the proximity of Dance City artistic school would, in theory, provide alternatives for occasional scheduled animation and activities. A multi-storey parking garage would fill the parking gap, increasing transport possibilities into the area, but also turning the development into a ground location for outer visitors to explore the area. The proximity of Newcastle Coach and Central Stations, as well as several bus stops would provide the needed public transport options.

Waterloo Square footprint is over 125 meters in length, sloping from north to south and west to east. A single approach was needed, in order to minimize the space's topographical limitations. The architects carefully designed the layout of the site and footprint of buildings to create a large central space, structured in level areas, separated by large feature steps and ramps. Particular care was also taken to ensure that the size of the steps and the design of the associated ramps created wide and clear routes through the space. The inclusion of these accessibility features was also thought of in the long-term operation of the space, in aspects such as the spacing of bollards, designed in order to grant access to the Council's dustcart, optimizing future maintenance. The level areas adjacent to ground floor uses would provide clearly defined routes and views into the site, promoting the use of the space by pedestrians and cyclists, and outdoor café areas, meaning that the uses could spill out into the space. Although there would be no form of formal seating, it was understood that café areas would satisfy that need. Also, the steps that accompany the gradual natural slope of the site were designed to be features on their own right, serving as informal seating areas during, for example, lunch hours.

Combined with proper illumination throughout the site, the steps and ramp areas would feature small LED lights embedded within the pavement and visible both within the space and from the surrounding area at night (Figure 5.76). This would create an additional attraction element that would make the space more appealing at evening periods. Additional innovation came in form of the 'Blanc de bierges' pavement material, a contemporary, handcrafted, textured man-made material, combined with flamed granite strips radiating out from the centre of the space and steps. This all-purpose material, suitable for heavily used urban environments, was designed to cope with heavy use. The use of these different textures and materials would create an interesting and attractive space suitable for this landmark development. Trash bins and bicycle parking facilities were also located in convenient locations, although other urban amenities were not considered. Removable bollards were placed on the northern and eastern entrances to the square, in order to allow the occasional access of delivery and emergency vehicles. Although soft landscaping was introduced, in the forms of small bushes, other elements such as more elaborated green features and grassed areas were avoided in order to reduce maintenance costs. Additional elements of climate protection were not considered as, according to the space's architects, that need was not seen as relevant in the British Northeast region.

Figure 5.76 – Waterloo Square physical features

Understood as a privately owned public space, certain goals were viewed as essential throughout the creation of this development. Beyond the concerns addressing visual quality and low maintenance materials, the space's physical openness was also designed with a safety goal in mind. Experience and interaction, although being possible, would be more hooked on the space's social setting and general everyday use, than on specific physical features designed for that goal in mind. Although it was understood that a new space was being created and hence would not be immediately apprehended into the public's habits, there was the hope that its physical and visual quality, combined with the nearby attractions would, over time, attract users and embed value into their minds. Over time, Waterloo Square would become a praised, and therefore a valuable public space in the city's network of public spaces.

For this comprehensive approach to see the light of day, it was essential, for Newcastle City Council, that financial and development agreements with the private developer were made in order to achieve a high quality landmark scheme. Therefore, this project also contributed to interventions in surrounding areas, such as refurbishment of the Westmorland Road/Waterloo Street triangle, the Redheugh Bridge works and any other necessary works. There was, then, an attempt to integrate this development with its immediately adjacent areas.

The space's visual setting, and adjacent ground floor uses would, in theory, be responsible for its apparent safety. As a result, no other forms of additional security features, such as CCTV or staffed security would be necessary. In the aspect of coordination among agents, Waterloo Square differs from Times Square, in the aspect that the latter one was delivered as one complete building project, while in this, there were four or five different hands doing it. Despite the fact that in both cases, the architects were given enough liberty to fulfil their vision, there were a several number of meetings and arrangements among the several stakeholders, and while some of the members wanted to challenge the existing preconceptions, no major difficulties were encountered in this process. The process went through all the planning procedures as any other space, with full public consultation. Although there were a few objections from people at nearby buildings, according to the Council's documents, mainly regarding the absence of grassed areas and similar types of soft landscaping features "there weren't any commentaries about the square being anything other than a benefit", according the project's architects, and the project did not suffer any change as a result. Beyond from the creation of new public space, for the space's architects, the real urban contribution comes from the creation of new uses around Waterloo Square, mainly the parking garage, the hotel, and the Dance City building.

5.8.3. OPERATION STAGE

After a few years in operation, and despite all hopes and expectations that were placed in it, the space has still not acquired the intended sense of activity. Even though the combination of public transport and car parking assure its proper connection to the city's transport network, the space apparently failed to successfully integrate in the city's pedestrian network, as footfall numbers are significantly lower than expected. Although this is a privately owned public space, use restrictions are not very strong, with skateboarding being the only restricted activity, visible through signage. While Dance City has the potential to act as a strong movement generator at the top end of the space, it does not happen as such. The project's architects, who have been occupying part of the ground floor of Central Lofts for a few years now, mentioned the occasional use of the square by part of Dance City's students, but also by residents of the nearby Chinese Quarter, especially during the New Year celebrations. For one of Newcastle's urban design team members, "it was a space with no need for a space… there's no point, there're a lot of streets around there, you just needed more streets, animate the streets, clear the front and back, and having that space". The lively frontage role wanted for the ground floor of the buildings facing the square also failed to fulfil its role, as the spaces intended for cafés and restaurants have seen distinct uses. While the ground floor of the parking building is in fact occupied by a restaurant with an adjacent café area, the ground floor of Central Lofts building is occupied by the offices of NAPPER Architects and a Probate Office. As a result, only the restaurant spills out its activity to the square's space, which is only visible during dinner periods on warmer days. During certain times of the day, and when the weather allows it, nearby workers and students can be seen sitting on the space's steps, fulfilling the role they were intended to, even if for short stays of under 10 minutes (Figure 5.77). Still, and for most of the time, Waterloo Square is mainly used as a passage site.

Figure 5.77 – Main uses at Waterloo Square

All design features of the project can be found today. The space's full physical accessibility is in place, according to the architecture project. Still, the visibility from the south side of the space can be incomplete, as the existing level changes make it impossible, from certain angles, to grasp the entire site at once. To address that issue, signage was installed in order to direct first time visitors to the space's surrounding activities. The design features do not pose any direct restrictions to use, as all space's steps and ledges can be used as seating locations, and the inexistence of grassed areas means that no desire lines could be created through them. No benches and other formal seating elements were installed, as indicated in the project (Figure 5.78). In the works of Mark Bowman, one of the space's architects, "the space is a route, there are no tables, chairs, and stuff in the square. We preferred if there were. But even if there were, they would have to put them away, for safety reasons, at night." The remaining urban furniture that exists, namely bike racks and bins, are enough, in the architects' perspective, to cater for the possible space's user needs. As such, no other amenities are available, such as drinking fountains or

public toilets. In a way, this shows the need for a commitment between the establishment of a user-friendly space and an easily maintainable space that would maintain its level of visual quality throughout time. For Tony Wyatt, the space was never conceived as one that someone would use consciously, hence the absence of urban furniture. The space's spherical bollards can be understood as interactive elements, as are sometimes used by children as playing elements and by adults as aids to their workout exercise. Although the space keeps, in part, a "sort of pristine quality", although not with the same level it presented after its completion, several moss spots started appearing along the pavement's joints. As a result, this quality is gradually being replaced by a certain visual monotony. This is the outcome of an incomplete management agreement between the site's owner and Newcastle City Council, affecting this space's maintenance regime. This lack of maintenance has consequences in other levels as well. Although not as severe as in other spaces in the city, such as the Blue Carpet, malfunctioning pavement lights, broken glass bottles, and food waste are common elements across the space. One of the trees in the central section is also in very bad shape, contrasting with the level of visual quality that was intended for this space.

Figure 5.78 – Waterloo Square lack of urban furniture

The space remains closed to vehicular traffic, by the use of removable bollards, controlled by the concierge of Central Lofts, and only occasionally vehicles are seen in front this building. Although the brief did not consider the needs for any protection from the elements, wind protection seems to have worked better than expected. In fact, the space's architects mention "the wind whistling up Peel Lane (along Waterloo Square's northern edge) is 10 times worse than anywhere in the site. The rest of the site, and we've been incredibly lucky that we haven't created any wind tunnels … everything works, and it's okay". Although CCTV cameras exist, especially surrounding the car park building, security was never an issue in this space. The space's visual openness and overall well lighting regime contribute to that, and as a result "there have been no muggings neither any police notices regarding that matter".

Even considering the space's problems in terms of upkeep, more than 92% of its users consider it as properly maintained and 96% consider it safe. The lack of graffiti and other more highly visible forms of physical degradation justify this fact. As the space is mostly used as a passage site, only 26% are frequent users, usually nearby workers. A plausible explanation is that most of Waterloo Square's users do not spend enough time to perceive its real problems. The space's physical configuration is the reason for some users expressing their safety feeling as "there is the car park nearby" and "there might a lot of people looking from the buildings". Others, on the other hand, showed their discontent mentioning the lack of grassed areas and other green elements, even though there were "some nice lights at night".

This space classifies poorly in terms of perceived value, surprise feeling, involvement intention, use and comfort levels. Although some users mention that "this is a valuable space as it's better than having some buildings", others mention that it "feels quite empty", and there "is nothing to do, as there should be more things to attract people". In a way, this represents the unsuccessful integration in the citywide network of public spaces. Surprisingly, a high percentage of users consider Waterloo Square to be a traditional public space and, as a result, feel a relatively high level of freedom in it.

The space's management does not have a strong level of involvement in the space, as is normally found in privately owned public spaces. Two CCTV cameras, located on the corners of the parking garage building, mark the only form of management control. All of the ground floor levels are occupied, generating the intended rent revenue, even though only a portion of it contributes to the animation of the site. Wi-Fi is also not available. As Waterloo Square management is integrated in Central Loft's building management, there is an attempt to limit the space's use to the minimum acceptable level, in order to interfere a little as possible with the residential function that immediately surrounds it. This also means that Waterloo Square is run in isolation with other public spaces in the area. The space's owner does not want to incur the charges of maintaining the space, since it believes that by providing a new space for public usage, the city should be responsible for its upkeep. On the other hand, the City believes that a privately owned space should be maintained by its owner. As a result, NE1 teams, the concierge of Central Lofts and the residents from surrounding buildings carry the responsibility of general cleaning and litter picking (Figure 5.79). Although this shows a sense of pride in the space, it is not enough to reverse the physical degradation process of the space. As there is not a strong private coordinator and developer in this process, this situation is most likely to continue. This kind of closed management also shuts its doors to any outer coordination, either with entities such as City Council, but also with the general public. For Michael Criley "Waterloo Square is really interesting, because we knew it was going to be sort of for residents, and they just didn't do the consultation work". In that perspective, "as two of the new blocks were residential, to give those residents a budget to do their own thing, to design it themselves was one of the issues that was thought at the time, but never materialized".

Figure 5.79 – Waterloo Square litter problem and NE1 clean team intervention

5.8.4. SPACE USAGE PATTERNS

The overall reduced pedestrian traffic through Waterloo Square, as will be seen ahead, led to a division in a large number of possible paths (Figure 5.80). North south crossing traffic is indicated by paths one to four, representing all possibilities between the two southern and equal number of northern entrances. Paths number five and nine indicate cross traffic through the space's northern and southern edges, respectively. Paths six to nine represent the influence of adjacent facilities, respectively the restaurant, office and residential building, and parking garage.

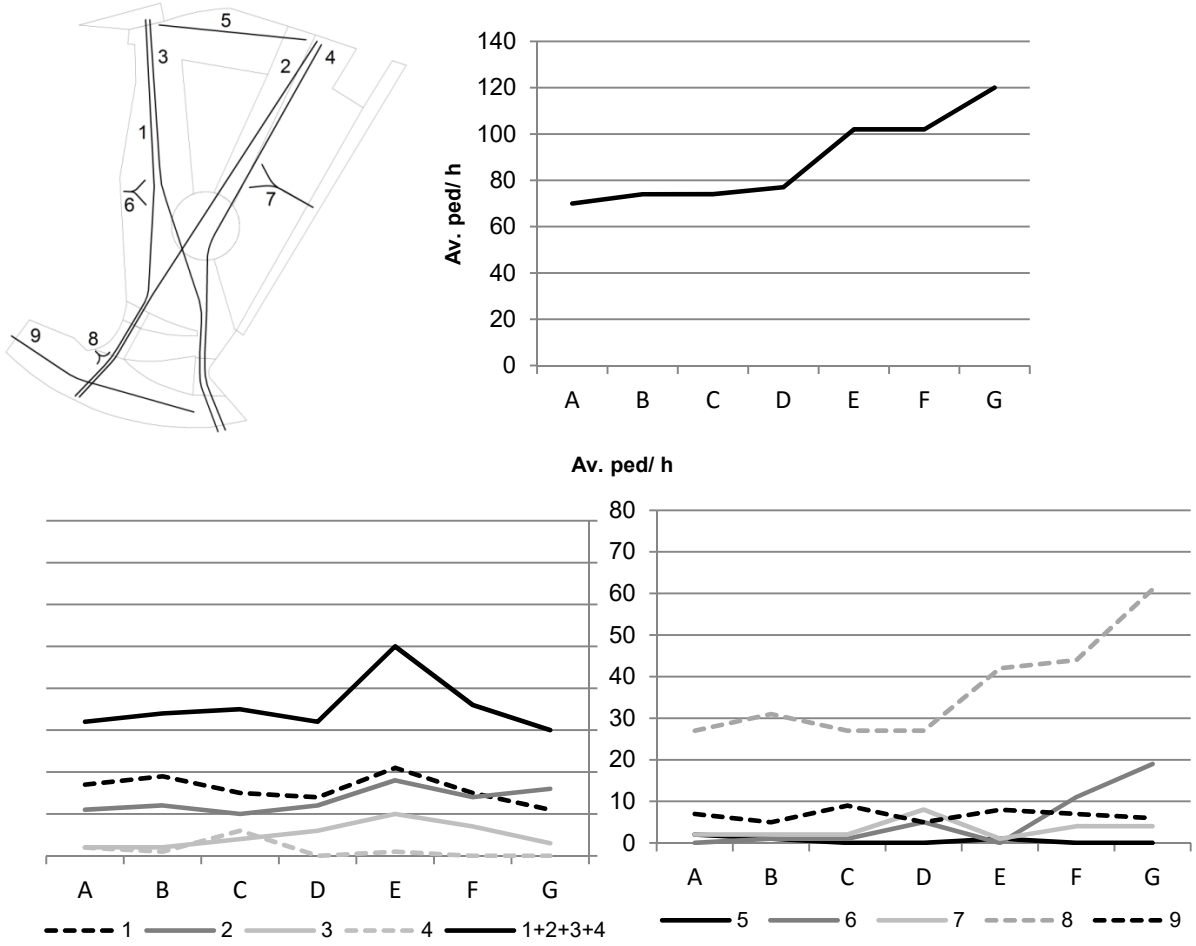


Figure 5.80 – Waterloo Square daily average pedestrian flows

Analysing pedestrian footfall allows the identification of a steady increase over the course of the day, especially from the beginning of the afternoon onwards (Figure 5.80). Although initially one could think that cross traffic would represent the more expressive route, the result show that this role is enacted by pedestrian traffic generated by the parking garage. This can be explained by the pricing regime of the parking garage, free after 17:00 on weekdays and 18:00 on Sundays. Its location, close to the city centre's main leisure district is also another element to take into consideration. A similar timely increase can be seen in path number eight, measuring traffic to and from the restaurant. During evening hours, this path can represent almost 20% of the entire footfall of Waterloo Square. The fact that one of the most used paths in a public space is the entrance to a restaurant justifies Waterloo's Square overall reduced impact in the overall pedestrian network, but also, in general terms, the importance of this type of amenities to a public space's vitality.

The use of Waterloo Square as a pedestrian thoroughfare is more intense during afternoons (period E), especially due to the contribution of paths number one and two, meaning that urban areas towards the southwest of Waterloo Square is the one that most benefitted from the creation of this new pedestrian link. Cross traffic alongside the space's edges present little to no relevance along the northern edge (path number five), and reduced but consistent values across the day along the southern edge (path number nine).

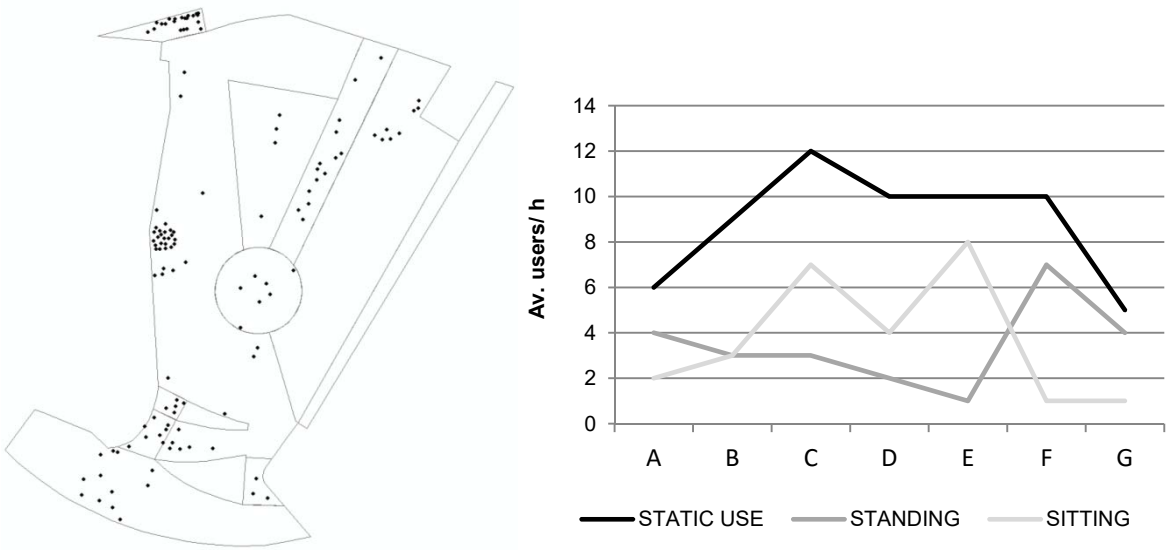


Figure 5.81 – Waterloo Square spatial usage distribution and hourly evolution

Although users are distributed along Waterloo Square in a fairly heterogeneous pattern, with a stronger concentration along the space's steps, as intended in the project brief, and the outdoor restaurant area, results show that Waterloo Square is a highly underused space (Figure 5.81). Over the course of a regular day, Waterloo Square's peak use occurs during lunch hours, followed by a constant reduction in the number of users. This means that, apart from the attraction of nearby workers seeking for some outdoor space where to eat their lunches, Waterloo Square fails to provide any additional reason to attract these and other users after regular work hours and during night periods. Individual activities such as 'standing' or 'sitting' are characterized by strong heterogeneity in its average hourly patterns, and no relevant conclusions can be achieved from its analysis.

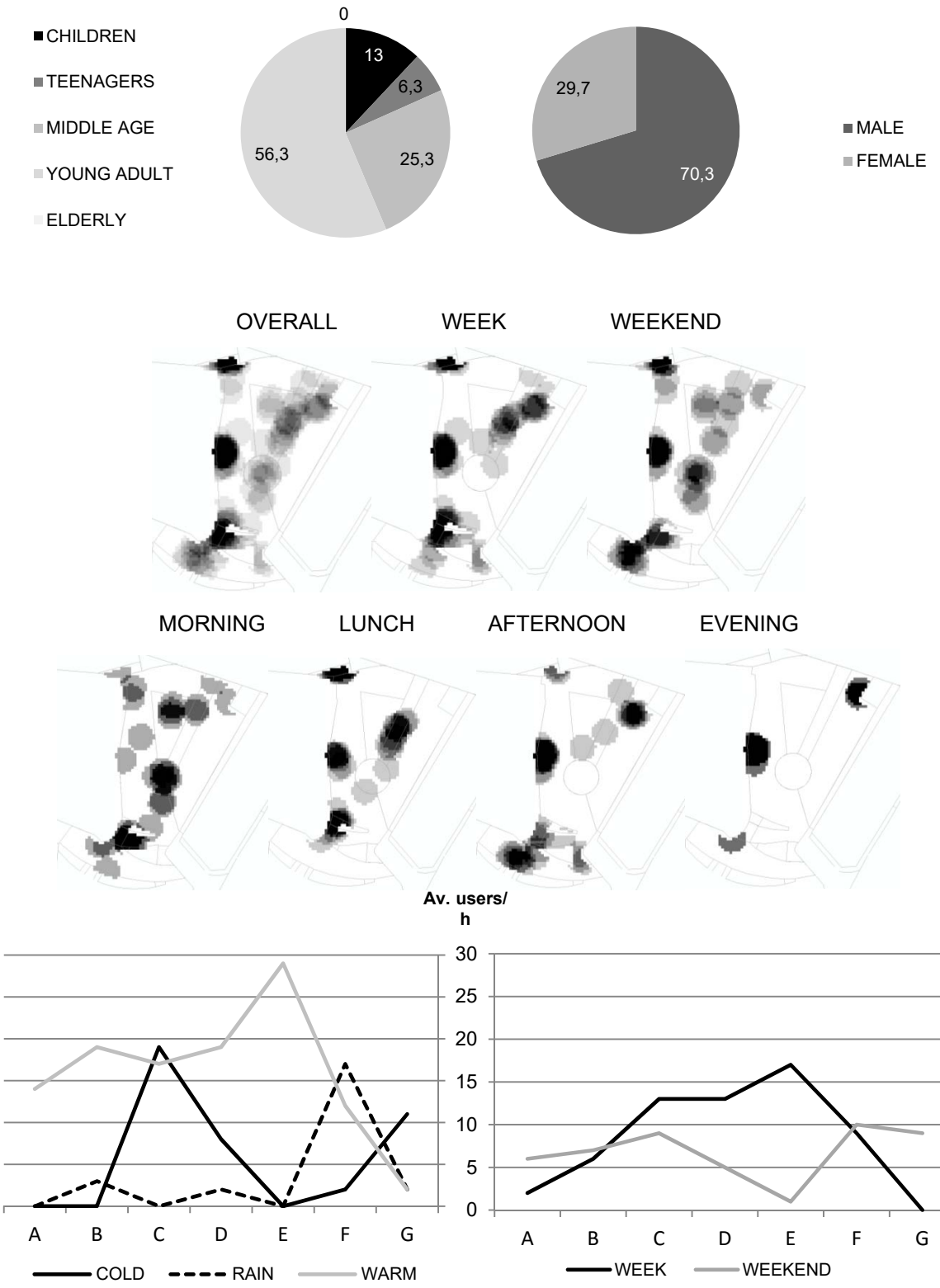


Figure 5.82 – Static usage of Waterloo Square

Women are indeed a minority in Waterloo Square, representing less than a third of the total number of users (Figure 5.82). A note has to be made regarding the total inexistence of elderly users in this space, being a strong indicator of this space's lack of comfort conditions. Division between working days and weekends showed no relevant differences in spatial patterns, although weekends tend to be characterized by fewer users. As the day progresses, spatial heterogeneity also tend to increase, with users focusing around the restaurant and parking garage entrance areas. Working days tend to average a higher number of users, with the exception of evening and early morning periods.

Due to the reduced number of users both in cold and rainy days, large fluctuations mark its description. No particular space feature or event can justify the peaks identified at lunch or at late afternoon periods. Hotter and sunnier days attract a significantly higher number of users to this space, especially during afternoons. Nevertheless, a total of thirty users per hour is manifestly below expectations for a space that was intended to be a social square.

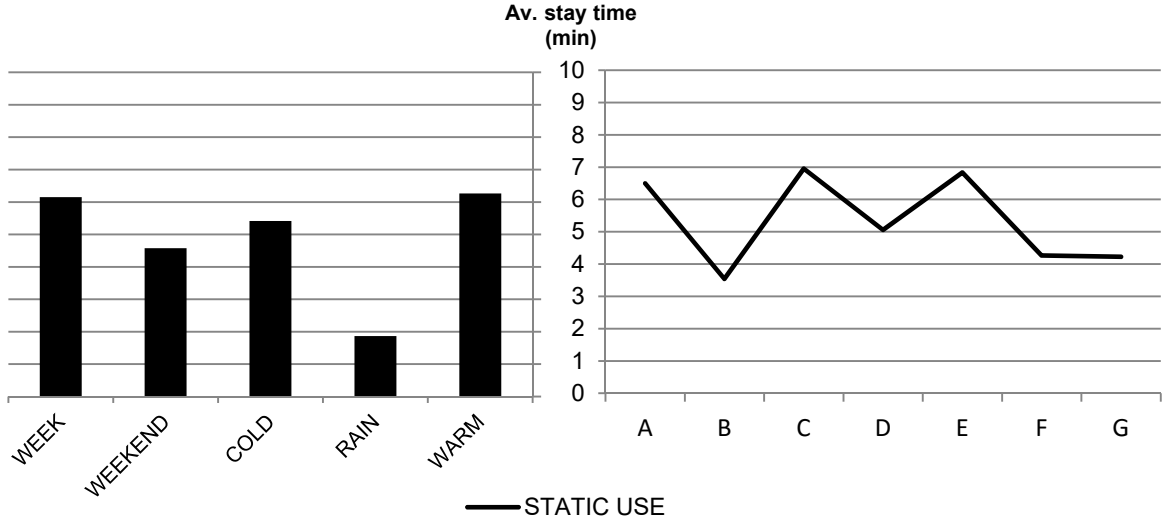


Figure 5.83 – Waterloo Square average stay periods

Due to Waterloo Square's reduced usage, any assumptions resulting from the analysis of stay times must be taken cautiously (Figure 5.83). The large fluctuations verified in either the daily and yearly averages are strong representations of that. Still, it can be assumed that, on average, weekend use is shorter in comparison with the rest of the week, and summer days are characterized by longer stays. Rainier days, as expected, are characterized by very short stays, with cold and warm days presenting similar values. Although this fact might come as a surprise it is, in fact, a consequence of the space's lack of suitable comfort features. Regardless of the temperature, which might induce more pleasant conditions for public space experience, if the minimum comfort conditions are not provided, users will not stay in a given space for longer periods. Despite these fluctuations, over the course of an average day, the highest values can be found at early mornings, lunch, and mid-afternoon periods. However, the mean average of around five minute is clearly below average for a public space of this nature.

5.9. OLD ELDON SQUARE

5.9.1. PRESENTATION

Old Eldon Square, one of the central public spaces of Newcastle City Centre, is a clear example of the changes the city went through over the years. Designed by John Dobson in 1824 and built by Richard Grainger, it was the first joint initiative of these personalities. Named after the late Lord Eldon, it consisted of an enclosed garden bounded by iron railings and was most likely used privately by residents of the surrounding Georgian town houses.

In the 1960's, in order to respond to the needs of a new central consumption area, the northern and western edge of Georgian buildings were demolished and replaced by 'Eldon Square shopping centre'. The central section was renamed 'Old Eldon Square', in order to smooth the transition for the local residents and consumers who would be using the new shopping environment. The surviving Georgian edge was converted, over time, into small businesses, while the war memorial in the middle of the square remained the principal focus for the collective acts of remembrance held each November. There was a great emphasis of usage on the internal mall and its ground floor and, as a result, there weren't any particularly strong routes across the square, turning Old Eldon Square into a tired external space. The Shopping centre façades, mainly composed of blank brick walls, marginalised this space, turning it into a gathering area for the youths and drunks.

In 2001, Newcastle City Council promoted a competition to refurbish the old bus station underneath Eldon Square Shopping Centre. The winning architecture firm saw a greater potential in the project and decided upon a major physical intervention, reinforcing its pedestrian routes and connection to the shopping centre. The Council embraced this idea, proposing a series of requirements:

- A respectful setting for the war memorial and Remembrance Sunday ceremony;
- An improved setting for the Georgian terrace on the east side;
- Improved pedestrian circulation through the square;
- A safe environment particularly during the hours of darkness;
- To make an area accessible to all;
- To allow the general public the opportunity to dwell and enjoy the tranquillity of this rare green space in the heart of City centre;
- An enhanced environment for pavement cafes and restaurants to overlook;

In 2008, Old Eldon Square reopened to the public, although small adjustments took place during 2011 in order to correct small design flaws.

Square total area	4717,1 m^2
Green area	1809 m^2
Number of benches	34
Square perimeter	295,8 m
Blank frontage extension	58,5 m (20%)

Figure 5.84 – Old Eldon Square project presentation

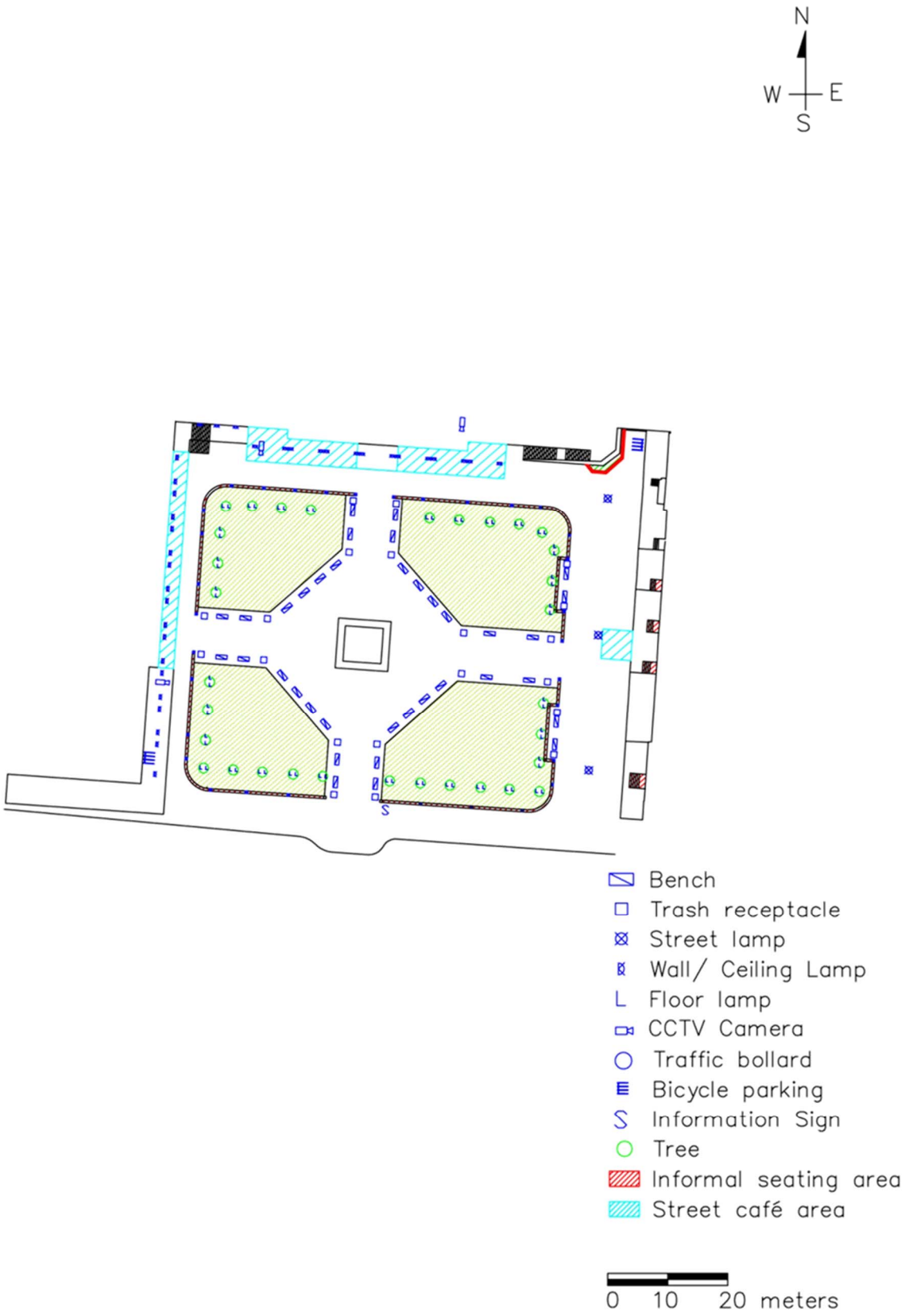


Figure 5.85 – Old Eldon Square design overview

5.9.2. PROJECT STAGE

As the main goal of this project was to reinforce activity through the square, a great focus was given in the improvement of its accessibility and use conditions (Figure 5.86). Old Eldon Square had "a sort of curious, almost asymmetry", in the perspective of Newcastle City Council team, because everyone passed alongside its edges. As a public space, it would remain open 24/7, and no restriction on uses would be taken into action. The creation of a new entrance to Eldon Square shopping centre, new pedestrian paths through its central section, and a southern link through the shopping centre into Clayton Street would hopefully turn the space into a major pedestrian thoroughfare in Newcastle's city centre. Ground floor units along the shopping centre's northern and western edges would open up to the square, mainly through the form of outdoor cafés, increasing the space's vitality, but also its natural surveillance. Despite the intended increased activity, Old Eldon Square static use was mainly targeted towards relaxation and fruition, meaning that public events would be directed to the nearby Monument square. Public transport provision would remain unchanged, through the nearby Monument Metro Station and the bus stands at Blackett Street and Old Eldon Square bus terminal, across the shopping centre building.

Figure 5.86 – Design renderings of Old Eldon Square (CDA Architects)

Paving, lighting, and planting were the main physical aspects addressed in this redesign. The creation of new paved route also tried to address the desire that existed from people trying to cut their way through the square, leaving wear marks on the grass, instead of making the path through its perimeter. The large grassed area, in the words of City Council officers, "was quite popular, with people sitting out and using it, and obviously, I suspect, the grass was getting quite damaged, so the paving helps to deal with that sort of things". Yorkstone was selected as the main paving material, for its longevity and reduced maintenance, but also for its lighter colour material comparatively to the traditional Caithless slabs that form the pavement of most of Newcastle's Grainger Town. This would brighten up the space, making it more attractive in sunnier days. Due to the space's topography, accessibility conditions were not an issue. Although a small canopy would feature as part of the shopping centre redesign, its height relative to the pavement would not provide effective protection from the natural elements. The space's inner legibility would also be increased, although little could be done regarding the visibility to the surrounding area, due to the shopping centre's imposing presence. Fencing would only serve to delimitate the outer edges of the grassed areas, meaning that access to it would be granted from inside the square.

The Council had, at the time, a strong say regarding the selection of urban furniture. As the budget for this space was limited, the architect team focused on the smaller bits that couldn't be easily fixed later, as "it's easy enough to bring in a new seating later, but we wanted the lighting right, so the stone bollards in between the low metal railings had these specially made bronze lights that marked the perimeter and cast light onto the walkways". Although it was realized that the grass would be heavily used for seating,

there was a concern to install enough formal seating elements, through the form of wooden benches alongside the new paths in order to be used especially by old people or when the grass would be wet. As the space was expected to become a new focus for nearby office workers at lunch times, trash bins would be placed alongside the main pedestrian paths and seating areas.

Several lighting schemes were also considered to reinforce some of the space's elements, but also to guarantee safety conditions at night. CDA architects placed small bushes in the centre of each of the four main grassed areas, reducing the space's suitability for ball games, which could damage the grass. Besides the maintenance of the war memorial, where the existing railings were to be removed, and the installation of historical plaques in each of the space's four entrances and regime motifs in each of the benches, there was the intention to place a LED screen on the Southwest corner of the square, in order to "catch your eye to draw you on", and create an extra element of attraction and animation to the site. Apart from bicycle parking, no other amenities were considered. Water features, although being a possibility, were kept away from the space's design, as "it would have taken away precious green space, so the priority was on leaving the greenery". Vehicular traffic would remain prohibited inside the square, apart from the occasional access to maintenance and delivery vehicles.

While being a blend of civic and thriving commercial space, user interaction was an important aspect in the revamp of Old Eldon Square, where the visibility improvement of the war memorial was seen as the major aspect in the space's symbolic value (Figure 5.87). The Council officials were, in the words of the project's architect, very sensitive to changes that could affect the symbolic value of the site, namely regarding the war memorial and trees representing the Northern regiments. As a result, the project was managed with a strong sensitivity, in order to evoke its values and solve its problems, as "you've got the war memorial in the middle, it's got to be a setting for the Remembrance Day, so probably this wasn't the right place to do wackier things, you know, in the surroundings". The creation of a quality site was therefore viewed as the means to achieve a space that would foster interaction and pleasurable experiences.

Figure 5.87 – Old Eldon Square symbolic features

Safety and comfort were also concerns, by improving the inner legibility of the site and lighting conditions, but also by offering more suitable conditions for more prolonged stays in a more appealing setting. Even though this would contribute to an increase in the space's safety perception, CCTV would be an important asset to safeguard it. Street cafés would also provide complementary assets, while being important sources of revenue. As the project was included in the physical redevelopment project of Eldon Square shopping centre, to one of the intervention project's architect, one of the issues that

contributed to the success of the project was the meeting of the needs of the several involved agents, as "there was something in it for the planners, because they got the new route through, they liked the idea, it was good for the bus operators, because it took the bus station out into the open air, makes it much closer to the Haymarket bus station, (…) and finally, there's all the additional value of the shopping". As no major difficulties appeared throughout the project, apart from the funding to the bus station renovation, the management response could be seen as adequate. Beyond the regular planning application process, that catered for the community participation aspects, there was some additional community engagement in the process, due to the involvement of some veteran groups and young residents. Although these groups expressed some concerns, no major changes to the project took place.

5.9.3. OPERATION STAGE

Old Eldon Square operates mostly as any other public space in the city of Newcastle. It is free to use at any point of the day and only alcohol drinking is prohibited, in order to prevent antisocial behaviour. As this restriction, enacted to preserve public order, is in place in most of Newcastle's city centre, it cannot be understood as a site-specific use restriction. To Newcastle City Council, the intervention in Old Eldon Square is probably the most successful one in the city. The creation of new routes was seen as a success as, according to the space's architect, the new entrance to Eldon Square Shopping Centre became its most used one, "so, from being zero to the main one just proved that if you get access in the right place, in an attractive position, it works well". The heavy pedestrian flows and static use, with special regard to lunch and afternoon hours, show that this bet was well founded (Figure 5.88).

Figure 5.88 – Old Eldon Square heavy usage

There is activity "effectively on three sides of the square, where before it was only one, it encouraged the existing terraces that wanted to use the paved area, and it persuaded Eldon Square owners to put more direct routes through the blank block. In a sunny day, the place is sort of completely transformed, whereas before it was patchier". At those occasions, there is an equal distribution of use, not only in spatial but also in demographic terms. At peak hours, seating is heavily used, as well as the four main grassed areas, comprising a mix of teenagers, middle age, and elderly residents, who often stay in the square for long periods. Although the shopping centre's edges were significantly opened to the square's pavement, almost 20% of the square's edges remain lacking any activity.

As intended in the project brief, few public events take place at Old Eldon Square. Public transport options are readily available, and car parking is provided through the adjacent Eldon Square shopping centre. Old Eldon Square design features were, for the most part, responsible for its success. Although

the removal of the symbolic tree lining was most criticized in the project phase, it succeeded in opening up the space, improving its overall legibility. The wooden benches that accompany the main pedestrian pathways are often heavily used throughout the day by all types of users, in a place previously dominated by youth people and heavy drinkers. In fact, in certain occasions there is a certain overuse of the square, meaning that seating locations have to be improvised (Figure 5.89). As a result, those occasions raise awareness regarding the railings unsuitability for comfortable seating. Visual connection is only possible through the Blackett Street axis, as the omnipresent shopping centre blocks any view in the remaining directions. Still, the different lighting schemes are effective in providing proper lighting to the entire square, increasing the space's safety feeling.

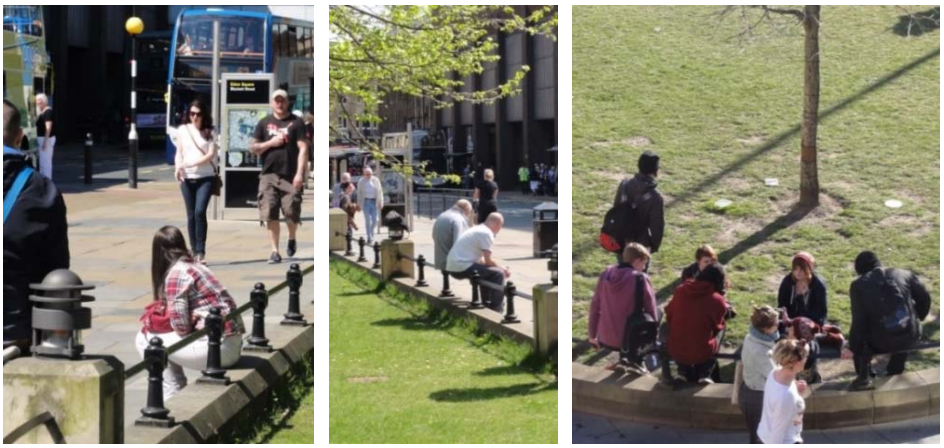


Figure 5.89 – Old Eldon Square improvised seating locations

Protection from rain and wind is possible through the existing shopping centre canopies, although their relative height weakens its effectiveness, as expected. The arcade along the southern edge, although technically not part of Old Eldon Square, can provide this wanted protection. The existing trees, however, although away from the main designated seating areas, can provide effective coverage from the sun to limited sections of the grassed areas. Trash receptacles are readily available and occasionally emptied more than once a day, once again justifying the space's heavy use. Through NE1 and its initiative 'Use our Loos', public toilets are available to the general public inside the shopping centre. The historical plaques and regiment motifs, apart from the pre-existing war memorial provide the important interactive elements, while the LED screen, due to budgetary shortages, was never installed.

Despite the first major redesign of the square in 2008 being considered a major success, some signs of wear at the grassed areas near the junctions and in areas adjacent to seats started to become visible. In the perspective of Newcastle's urban design team "they just added more hard surfacing because the grass was suffering and the tress were suffering, there's just technical problems, I guess, around managing soft landscaping in the middle of the city". In order to keep maintenance costs at acceptable values, the Council invested in the extension of the paved area to part of the space between the path's arms, as well as behind the seats. The railings around the war memorial were reintroduced, in order to impede its further degradation by skateboarders. In the end, this allowed for a better overall image of the site, though some signs of wear are still visible, in a smaller scale, along the diagonal edges of the grassed areas, and in the northeast corner, due to the frequent agglomerations of teenager groups (Figure 5.90). Apart from this feature, the space is in an overall good physical condition and no particular remarks can be done regarding any shortage in maintenance and cleaning. Every morning, and occasionally more than once a day, Council workers maintain the square, picking up litter, emptying the bins and cleaning the pavement with a dustcart. As a result, the space maintains, most of the time, high

service levels, contributing to its overall attractiveness. Traffic restrictions, however, are not effective as expected. Despite the ubiquitous "No parking" warnings across the eastern edge of the square, maintenance and delivery vehicles are a daily presence in this section of the square. Bicycle parking is often readily available, although occasionally fully occupied.

Figure 5.90 – Old Eldon Square grass wear and daily maintenance

Analysing the space-user connection only reveals the inevitable. Old Eldon Square is, in fact, a successful public space, as it responds to most of its user's needs, in terms of freedom, use dynamics, visual condition, security, and comfort. Most people refer to it as a "space to be relaxed when going to the shops", and while some show some concerns regarding the broad presence of younger crowds, implying that "is used by the wrong people, there should be a separate space for the youngsters, like a skate park", the safety of the heavy usage means that Old Eldon Square is a "good space for kids to play in". Its location in the vicinity of a major transport interchange, combined with the region-wide attraction of the city centre's shopping district, means that most of Old Eldon Square' users are, in fact, occasional visitors. Still, only 32% felt surprised with the space, justifying the cautious approach of the design team. Surprisingly, only 42% of interviewed users attribute and particular symbolic value or meaning to the space, even though the war memorial and its large grass footprint is responsible for its "strong value, as it's the only green space in the middle of the city". Approximately half of the sample showed intention of involvement in the space's overall operation.

Citywide police cameras complement the shopping centre's CCTV system, in a total of three elements, and also being one of the few locations in the whole of city centre where its presence is indicated through signage. The attention to any issues that could appear of its everyday operation also justifies this fact. Although Old Eldon Square is managed in conjunction with other public spaces, the reality is that there is not a valid interest from the Council to turn Eldon Square into a space for public events, with the justification that other spaces in the city provide better conditions. Street cafés and street vendors constitute to the vending mix of the square. Occasional communication is maintained among Council teams, but also with police forces, NE1, and the overall community, through the city's public communication channels.

The City Council Development Control Committee in 2006 praised the intervention, for using a simple design concept, with a consistent edge treatment on all four sides, while maintaining a sufficient cross path width to accommodate public seating and litter bins. It also made reference to the retaining of most of the previously existing trees. For other Council members "Eldon Square is a space that's improved incredibly, in terms of the redesign and the active frontages… it's a good place for contemplation, it's managed fairly well, and it wasn't really designed, they just put back what they took away".

5.9.4. SPACE USAGE PATTERNS

Seven main paths were used to describe pedestrian traffic across Old Eldon Square (Figure 5.91). Path number one represents direct traffic through the centre of the square and into Old Eldon Square's main entrance. Paths two and three comprise all traffic between the shopping centre and the western and eastern edges and through the central section of Old Eldon Square, representing therefore the new possibilities for pedestrian traffic that the space's redesign created. Paths number four and five still represent routes while similar to numbers two and three, run through the entirety of the square's western and eastern edges. To finish this characterization, paths number six and seven indicates access to and from the northwestern and northeastern shopping centre access, respectively.

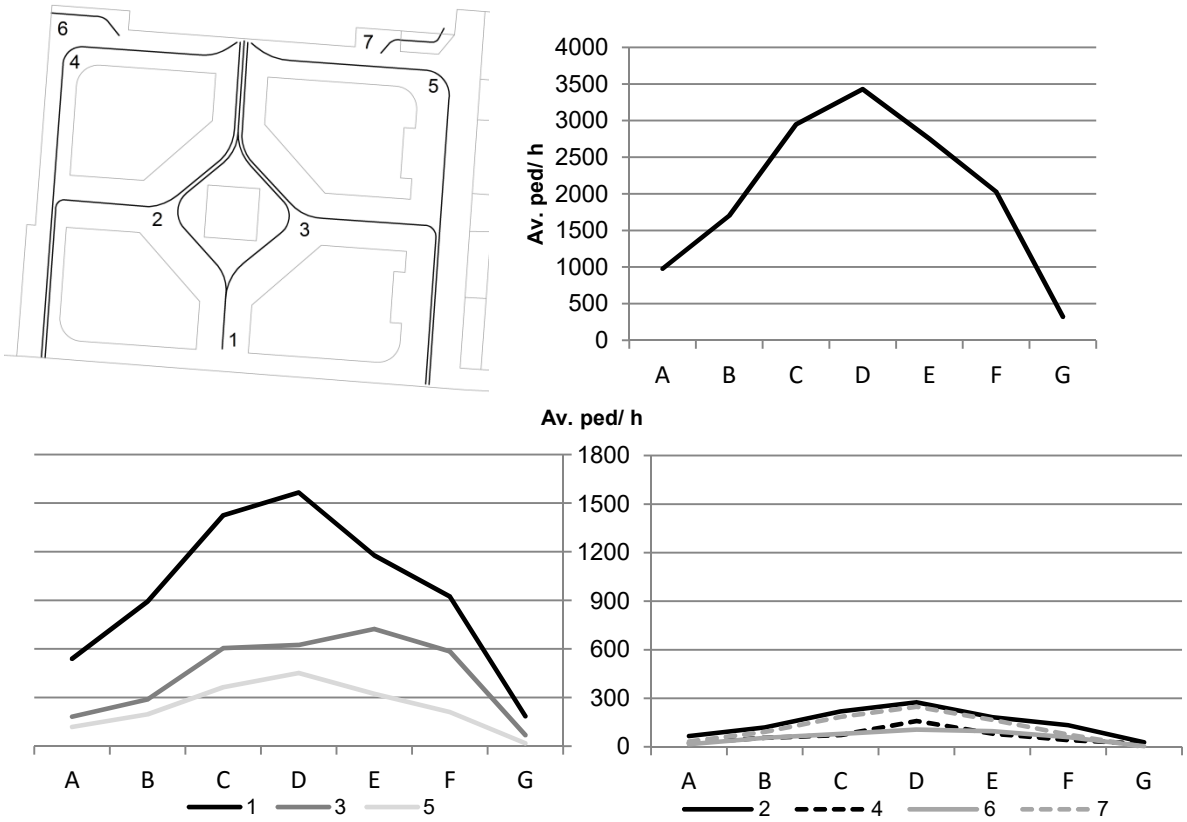


Figure 5.91 – Old Eldon Square average daily pedestrian flows

From all the analysed case studies, Old Eldon Square is in a class of its own regarding popularity, reflected in high volumes of pedestrian traffic and effective usage. Its central location, in the centre of the city's main shopping district, is at a first glance, the main factor for its apparent success. Pedestrian traffic across the average day of Old Eldon Square takes the form of a bell-shape curve, with its maximum value at late lunch hours (period D). Path number one accounts for almost half of the space's total pedestrian foot traffic, justifying the importance of this newly created pedestrian pathway. Old Eldon Square is also an important link between the shopping centre and the urban area towards the east, as is clearly visible in the values of paths number three and five. The area towards the west of Old Eldon Square is not capable of generated a similar level of pedestrian activity, as in seen in the average values for paths two and four. Path number six is characterized by the smaller amount of users, as it represents a secondary entrance to the shopping centre area.

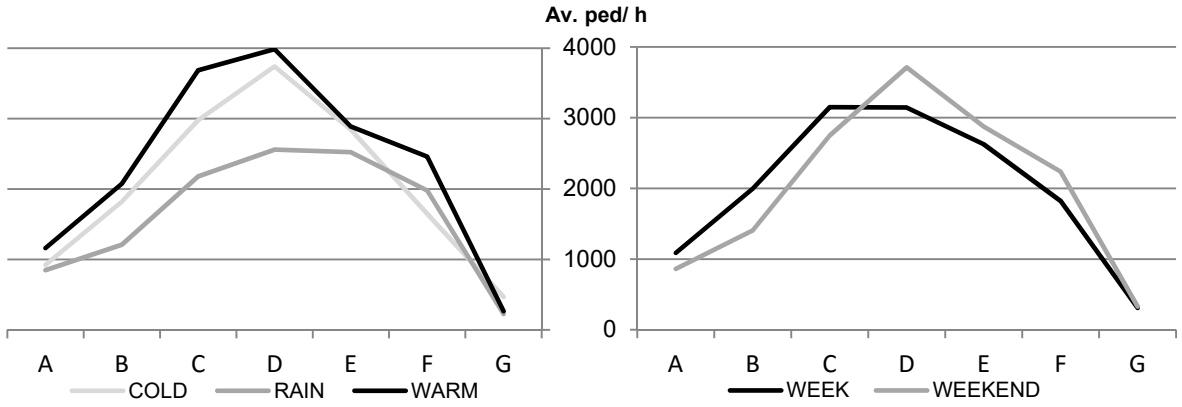


Figure 5.92 – Old Eldon Square daily pedestrian flows discriminated

Weather conditions create larger discrepancies, as rainier days are characterized by an average 40% reduction to what can be usually found both in cold and warm days (Figure 5.92). The leisure and shopping economy of Newcastle City Centre is therefore only slightly affected by climatic conditions.

Similar patterns and values can be found for both working days and weekend days, with non-working days taking the lead from late lunch period and onwards. Two reasons can explain the similarity between these two types of days. The first defends the presence of a small percentage of nearby workers and residents, making occasional visitors to the City Centre and shoppers the most significant part of this space's pedestrian footfall. The second acknowledges the present of these commuting pedestrian traffic and counts for its absence during weekends with a higher number of leisure visitors. The analysis of static use patterns can help to indicate which one is correct.

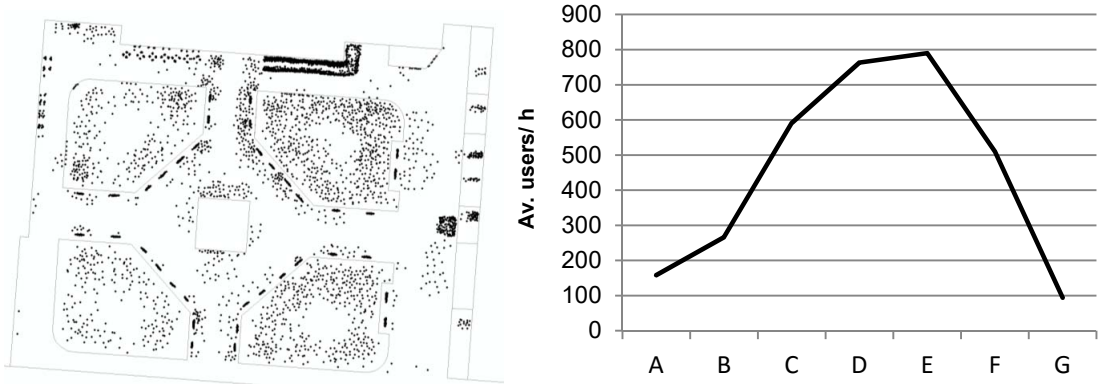


Figure 5.93 – Old Eldon Square spatial usage distribution and hourly evolution

Combining all observations of Old Eldon Square, a strong homogeneity is verified with users taking advantage of the large quantity of formal seating locations, grass areas, and street cafés (Figure 5.93). While it is often for users to appropriate the spaces edges, as central sections are often empty spaces, providing little to no interest, Old Eldon Square physical arrangement inverts this scenario. Although an edge effect is visible among the main pedestrian paths, this is a natural consequence of their heavy pedestrian flows, otherwise severe pedestrian congestion could take place, leading pedestrians, over time, to find alternatives that are more suitable. Nonetheless, this demonstrates that pedestrian traffic carries a strong influence over the choice of seating locations. Users tend to choose areas facing heavily used paths, once again proving the importance of high pedestrian flows in the success of a public space.

A similar bell-shape curve is visible in the analysis of the static usage patterns of Old Eldon Square, with a peak during late lunch and early to mid-afternoon periods, although with a higher discrepancy between extreme values.

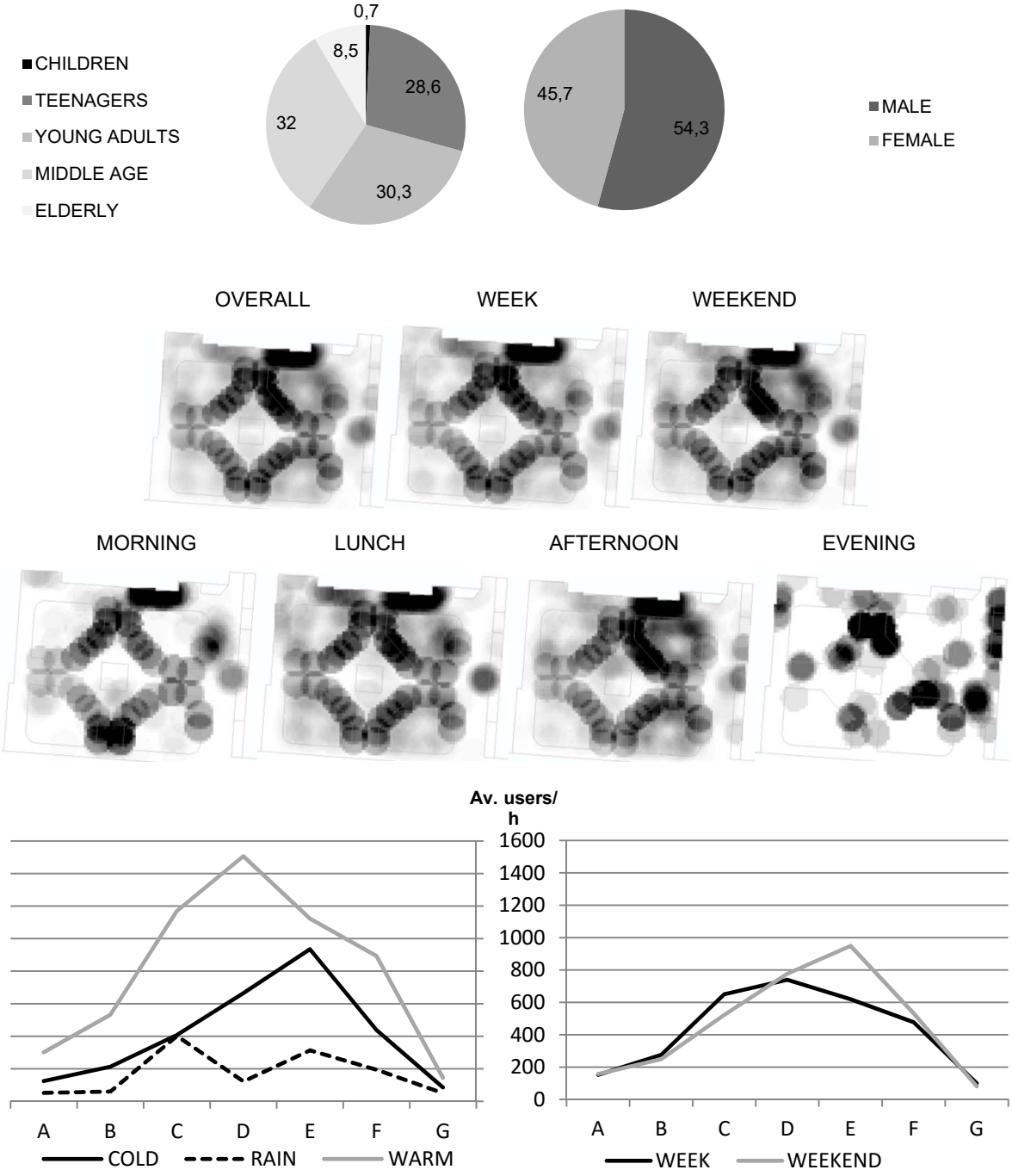


Figure 5.94 – Old Eldon Square static use patterns

A more even distribution between sexes and user groups, even if with a high concentration of teenage users, often considered a focus of anti-social behaviour, justifies, once again, the role of Old Eldon Square as a successful and lively public space (Figure 5.94).

Across the entirety of an average week, usage patterns are similar, matching the patterns of pedestrian flows. The analysis of the hourly evolution allows for some additional findings. When all formal seating places become full, users tend to start occupying the grassed areas, appropriating this space for resting purposes, leisure, or eating. This is visible during lunch hours, where seating location achieves its saturation point while the usage of grassed areas continues to increase. In fact, the combination of all grassed areas surpasses the number of users in all formal seating sections, showing the importance of this feature in a public space. The presence of the shopping centre building also casts large shadows over the space's western half, shifting users towards the eastern grassed areas. These sections prove to be more suitable to accept large groups, as is often seen among the younger sectors of the population. In fact, Old Eldon Square has for a long time been a preferred congregation site between specific user groups, namely teens and young adults with a particular apparel, commonly labelled as 'Goths'. These younger user groups also tend to occupy the steps along the eastern edge of the square, visible throughout the afternoon and night periods. In fact, Old Eldon Square user base changes over the course of day, with a higher proportion of elderly uses during the morning, and with a gradual reduction as the predominant age group as the day progresses. Street cafés and similar areas dedicated to consumption are also very popular among Old Eldon Square users. While the café areas present heavy use throughout the course of the day, restaurant areas concentrate the majority of its use during lunch hours and early afternoon, as expected (Figure 5.95). Night usage in these outdoor consumption areas is reduced as regular temperatures in Newcastle are often not prone to the use of these areas after sunset.

Figure 5.95 – Old Eldon Square street cafés

Weather conditions play an important role in its usage patterns. While is not unusual to see used seats under light drizzles, especially at lunch periods, the differences between these and other days with different weather conditions are clearly noticeable. This reinforces the role of the provision of seating in a public square. Still, this can also be a consequence of cultural and society features of Newcastle's residents as well as a greater adaptation to these weather conditions. On the other hand, in locations with milder climate, as is the case with Porto, situations like these would be deemed as extraordinarily rare. The peak at lunch periods of colder days and regular working days might indicate the representativeness of nearby workers, strengthening the second theory proposed during the analysis of this space's pedestrian flows.

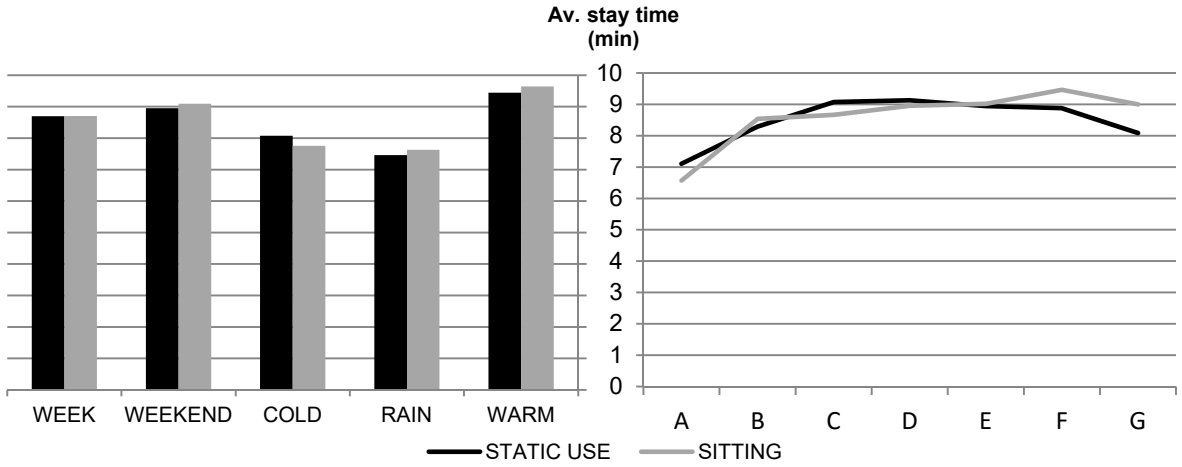


Figure 5.96 – Old Eldon Square average stay times

Duration of stays fluctuates during the day, with its peak during lunch periods, although on average it is usually to see stays over 8 minutes in duration (Figure 5.96). Weekend and working days presented similar values. As seen previously, use is clearly less intense under worse weather conditions and this study's observations verified an average of seven minute long stays for rainy days, which is remarkable for a space that does not offer relevant protection from the wind or rain. Despite the high number of users taking on the activity 'food consumption', general 'sitting' is also characterized by long durations, clearly demonstrating the success of Old Eldon Square in terms of attracting users and keeping them for long periods.

5.10. BLUE CARPET

5.10.1. PRESENTATION

In par with Newcastle city centre wide regeneration initiative, prompted by the city council in 1994 to regenerate the physical fabric of the city centre and to stimulate economic activity, the John Dobson Street corridor was identified as a site for enhancement. The improvements to the Laing Art Gallery, including a construction of a new entrance, set the motto for a wider redevelopment of the area. A new public space was to be created, despite, in fact, being the replacement of an existing road, and integrated into part of the 24-hour city, with appeal for people of all ages.

In 1996, a project with a funding of £300,000 led by the City Council's Division of Planning and Transportation sought the involvement of an artist with experience in public art commission, site specific and integrated design. An international ideas competition was put on motion, partnered with Newcastle Initiative, a private sector-led regeneration partnership with an aspiration to promote the development of Newcastle upon Tyne as a European Regional Capital, and in association with Northern Arts and Tyne and Wear Museums, and advertised in Artists Newsletter, with direct mailings to a selected list of suitably experienced artists. Over 100 people sent expressions of interest, and Thomas Heatherwick, at the time a young designer, was selected by his radical and imaginative approach. In his words, "rather than a civic square that had been intentionally defined and enclosed by buildings, this was a ragged space with side streets coming into it and between buildings of many types and ages. Since we could not make this a square by moving or redesigning the surrounding buildings, all we could work with was paving, street furniture and trees". The strategy was therefore to "use the surface as a device to unify the space and acknowledge its lack of containment by allowing the surface to go where it was not supposed to". The impression of a road and a hard-surfaced urban context was dispelled by the introduction of trees, as it was believed that "without this element of nature, it would be impossible to call this a public square, which is by definition a breathing space and place of relaxation."

The original concept was not the one of a carpet, but something more akin to a lava flow, which would have unified the space by lapping into the surrounding streets in what was, all in all, a former road junction. However, the realization of the financial resources necessary to achieve this goal, mainly due to its non-uniform curving elements, marked a turning point in the design. The Blue Carpet appeared then as a reworking of the original lava flow concept that would only loosely fill the space. Over four years, the project was developed into its final shape. Installation on site began in July 2000 and was completed in the fall of 2001.

Square area	2454 m^2
Green surface	0 m^2
Square perimeter	282,1 m
Blank frontage extension	38,4 m (13,6%)

Figure 5.97 – Blue Carpet project characterization

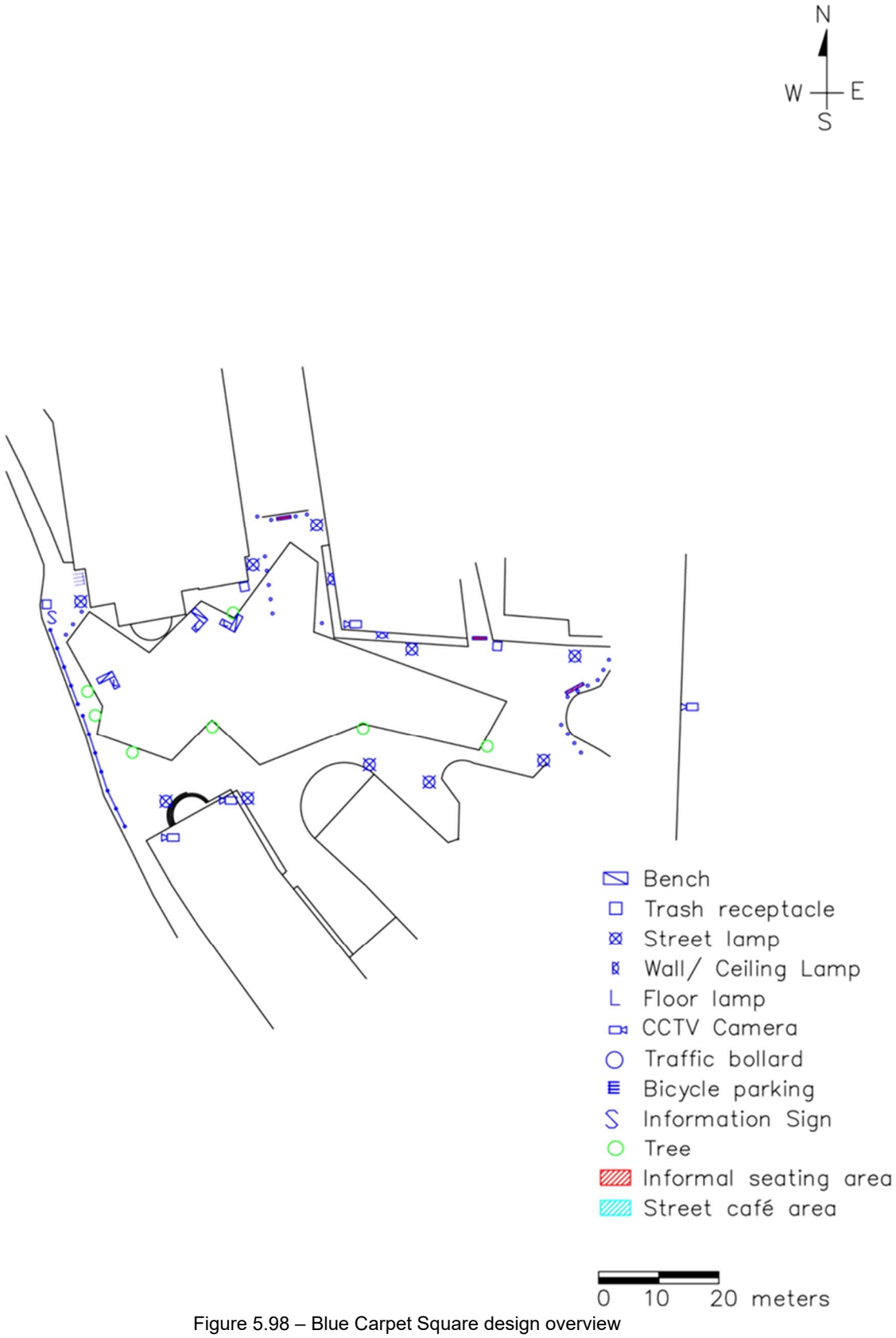


Figure 5.98 – Blue Carpet Square design overview

5.10.2. PROJECT STAGE

In late 1996, a public survey, backed up by a pedestrian count, showed a concern to respond to some of the needs of its users, namely the need to improve the area, preferably with seating areas, combined with planting, and the creation of public art and exhibition spaces, although in a secondary role. As a result, this project followed the premises of a traditional public space, regarding key aspects such as freedom of use and access. Apart from the obvious restrictions that are in place in the majority of Newcastle's city centre, mainly public drinking, and loitering, no additional site-specific restrictions were expected to be in place. The square location intended to draw significant public from several adjacent areas, including Monument, Northumberland street, one of the busiest pedestrian thoroughfares in the country, John Dobson and Pilgrim Streets, but also from the east side of the city, through the pedestrian footbridge over Central Motorway. The original aim of the scheme was therefore to bring a previously neglected area of the city centre to life.

Although the intervention in the Laing Art Gallery would create a new important active frontage, it was included in a distinct project, as it happened before the Blue Carpet proposal took shape. Several of the adjacent buildings, especially on the eastern side, did not provide any ground floor connection with the proposed square, but the project did addressed briefly the need for cafés and street entertainment, even if no particular changes would result in that subject. It also showed the possibility for the creation of a framework for outside activities associated with the Laing Art Gallery and its exhibitions, but also with other aspects of the City Centre's public life. John Dobson Street would cater for bus routes provision, combined with the proximity to Manors and Monument metro stations to provide the needed transport accessibility.

The biggest aspect of innovation in the project was its design, namely its paving material, consisting in tiles composed of shards of blue glass bottles, bounded in a matrix of white resin. The blue colour was chosen, as it was unusual for paving and had no associations with earth or grass. In five locations across the site, strips of tiles would appear to have been peeled up to make benches. The edges of these seats, as well as the ones of the carpet, would be finished with brass trims, in order to "catch the light", and in the voids created beneath the benches fluorescent light tubes would be installed to create "excitement after dusk" (Figure 5.99). In the artist's perspective, this "achievable but expensive proposal" would be lit up at nighttime in order to create linear constellations within the surface. Removable bollards, placed to prevent all but emergency vehicles from driving over the new surface would poke through apparent perforations in the carpet. Although the selection of materials, for its novelty, did not consider any future maintenance costs, the allocation of maintenance funds would, in theory, counter any possible physical degradation. The brief also stated the need for the design to cater for convenient pedestrian movement, including accessibility for all, to what contributed the relative regularity of the site, with a gentle slope on the East-West direction.

Figure 5.99 – Blue Carpet's design features after public opening
(http://www.publicartonline.org.uk/casestudies/regeneration/blue_carpet/images.php, accessed on 05/04/2014)

The trees were considered one of the most sculptural elements of the project, and, therefore, according to the architect they needed to be "mature and characterful", but also "too large to vandalize". As a result, seven trees would be installed, the largest one being over 16m tall, and therefore doubling as shading devices. A spiral staircase was also included in the project, replacing the previously existing one to other of better design, connecting to the eastern footbridge crossing Central Motorway. On the other hand, the area immediately around the Blue Carpet was left mostly untreated, deliberately to emphasize the distinctiveness of the carpet itself. Bicycle parking facilities and trash bins would also be installed across the edges of the square, while any other elements would be absent. Although several doubts were raised concerning the pavement material durability, the intransigence of City Council in adopting this solution shows an irrevocable will to cope with the consequences of this decision, particularly in managing the consequences of unexpected maintenance costs.

Since the beginning of the project, Blue Carpet Square's designer noted the lack of visual coherence and the mixture of buildings in the area. Instead of designing another object to fill the long, narrow space, he offered a solution that would optimise what was already there and enhance its function as an enjoyable public space (Figure 5.100). This visual openness would also guarantee the minimum safety requirements, providing unobstructed views. The design brief stated the objective to create a distinctive, vibrant, and enjoyable public space, but also useful to which its exceptionally high design standard would contribute. The space's unique design features would be responsible for the creation of surprise and excitement on its users, when combining the 'sum of all elements'. This space's brief therefore showed that the creation of this space would prove as a valuable addition to the city. Apart from the area-wide regeneration vision that could result from this intervention, no integration with any other wider urban strategies was materialized at the time, and the project was run in isolation with other interventions.

Figure 5.100 – Articulation of the Blue Carpet with the Laing Art Gallery building

Management-wise, this space was bound to follow the trends of similar public spaces in the city. Surveillance would be guaranteed through CCTV, and street cafés, a trend that was emerging in Newcastle at the time, could be a possibility. The Blue Carpet was a complex project also in terms of its collaborative structure. Although the Blue Carpet was commissioned by Newcastle City Council, with its own engineering and maintenance teams, none of them had equivalent experience with similar projects. Additional collaborations with higher education institutions, manufacturers, and craftspeople were needed in order to develop new materials and engineering solutions. In the early stages, the artist and City Council's urban design professionals did not operate as one coherent unit as each discipline was kept at their own area of experience. As project development progressed at a measured pace, a

number of management structures were put in place to support the artist and the development of the collaborative process. Support groups were also established, combining the City Council, Northern Arts, and the Newcastle Initiative, who met bi-monthly and ensured that positive and creative rapport was maintained between the commissioners and artist. Additional advice was also sought from professional sources. The initial project budget of £300,000 was successively updated, due to difficulties with the paving material, delaying the space's opening. Over the following months, an additional grant was secured from the National Lottery Arts Fund to a final budget of £1.4m, over four times the initial amount. Design changes and vandalism during construction and postponed the official opening from the Millennium celebrations to February 2002. During construction, in 2001, an arson attack set fire to surrounding scaffolding which collapsed on the flooring outside the gallery. Arsonists returned in October to repeat their attack, once again delaying the official launch (in The Journal, 7 March 2008).

Throughout the design development period there were a number of opportunities for public consultation, and a group of local businesses and residents met periodically with the design team throughout the design and implementation of the project. The artist and his assistants also carried out a one-day public opinion survey of pedestrians and met with owners of properties around the square. The partnerships formed with manufacturers, universities and craftspeople to find the best way of realizing the innovative design were, according to 'Public Art Online', the hallmark of the project.

5.10.3. Operation stage

Although the Blue Carpet is located next to Newcastle city centre library and the Laing Art Gallery, one can quickly realise that it is not an overly attractive space for people to use (Figure 5.101). The buildings are of questionable visual quality, and are closed to the square, reducing the possibilities for activity. According to one of Newcastle's city council members, it's "a big space without nothing around it". As a result, the space's use patterns are marked by a below average variety in uses and users. Due to the lack of any major use generators, use is focused on the space's edges, in the areas adjacent to the art gallery, the Newcastle Building Society buildings, and around the existing benches. Stays are usually of short duration, although some users on their lunch breaks can be seen on warmer sunnier days. As opposed to what was initially expected, the uses around the square did not generate a significant amount of pedestrian flows.

Figure 5.101 – Blue Carpet visual aspect after opening and today (http://i698.photobucket.com/albums/vv345/manorpark_photos/Bluc_From_Above.jpg, accessed on 05/04/2013 and author)

Although the space is generally free to use, the Council enacted in 2002 a byelaw prohibiting skateboarding, roller-skating and rollerblading, in order to stop further degradation to the paving material (Figure 5.102). Public events, such as a blues concert and the installation of an ice rink, were promoted to attract attention and businesses to this area of city, associating the Blue Carpet with a place targeted towards the arts, but also to promote the bid from Newcastle and Gateshead for European Capital of Culture in 2008. However, after the bid's failure, and facing severe financial restrictions, the Council started to retract on funding from arts and culture, directly affecting public all space animation strategies. Since then, public events in the Blue Carpet have been virtually inexistent, even if reports state a 52 per cent increase in visitors to the Lain Art Gallery in the year of 2002 (in Evening Chronicle 31 May 2003). Blank frontages are present along certain section of the Laing Gallery building, as well as across the entire eastern edge. Public transport is also available throughout John Dobson Street.

Figure 5.102 – Signage indicating use restriction at the Blue Carpet

The analysis of the design features of the Blue Carpet show contradictory results. Its linear structure, adopting full accessibility, combined with the inexistence of any restrictive urban elements, and a generally legible physical structure, with visual connection to all but one major direction indicates that all main design premises were achieved. Bicycle parking and seating is often available, and the installed trees dignify as space, as well as doubling as effecting protection from the sun during summer months, although protection from the wind is quite ineffective. However, when looking more carefully, the visual impact of this space falls short of the initial expectations. There are spread-out evidences of cracked and missed sections of paving and the original blue colour faded to grey (Figure 5.103). The existence of some sections of recently replaced paving stones, that retain part of its original blue tone, reinforces the difference between expectations and reality. Several areas of the site are also poorly lit, and dark corners, especially around the Laing Art Gallery building, can make the space feel unsafe. Also, some litter can be found from time to time, especially around Newcastle Building Society building stairs and the eastern most section of the space. The malfunction of the removable traffic bollards also allowed for an excessive and uncontrolled vehicular usage, contributing to further pavement and urban furniture degradation. In order to reduce the already high maintenance costs, and after analysing CCTV footage, the square's two westernmost benches, farther from the Laing Art Gallery, were removed further accentuating this space's use heterogeneity. Pressures from the urban design team to traffic management teams are still taking place today in order to correct this issue.

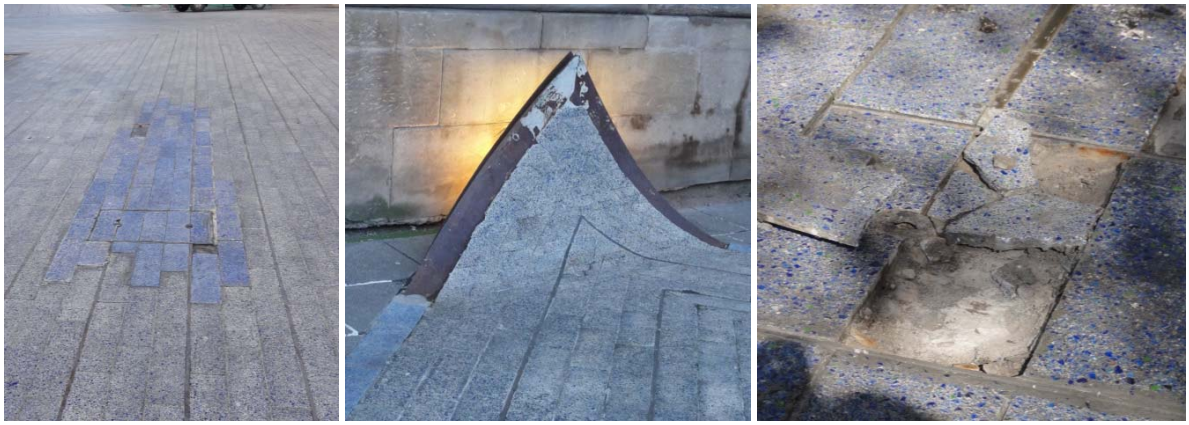


Figure 5.103 – Blue Carpet signs of physical degradation

Other reasons, however, are responsible for this shift. During an evaluation in 2002, a few months after its opening, members of Newcastle's City Council select committee inquiry expressed some disappointment, as to the fact that the most interesting elements of the "ill-fitting carpet" were left out because of cost reasons. Elements pointed to the fact that "the artist's cycle stands were replaced by more standard items, the seats were not as exciting as originally envisaged, as, the fibre optic was not installed, and the carpet did not cover the entire area, neither did it lap up at the edges of buildings and structures, making the finished square look rather bland".

In the aspect of freedom, this space is exceptionally well positioned, with more than 90% of positive opinions regarding freedom feeling and classification as public space. Comfort and safety results were also well positioned, even though "there are not places to rest and the space is slippery when wet", while the lack of greenery, tables and chairs seem relevant for its users. The absence of 'things to do' leads to a weak classification in the area of use suitability. Although the project was heavily promoted as a piece of public art, raising expectations to a very high level, after its opening, disappointment was the most common feeling. 66% of its users consider a proper level of maintenance, and only 40% felt surprised when first visiting this space. Surprisingly, some of the surrounding buildings were identified by the Blue Carpet's users as reasons of surprise and satisfaction. The adjacency of the Laing Art Gallery means that most of the space's users are tourists, and therefore would not be familiarized with the setbacks surrounding this project. On the other hand, their status of 'outsiders' grants them the opinion of not demonstrating any particular value for the space, neither showing any intention of being involved in the space's operation.

Several CCTV cameras provide the needed degree of surveillance intended by the public authorities. The existing café and adjacent external consumption space closed in early spring 2013, leaving the Blue Carpet with even less attraction points. Although the council is approachable from interested partners regarding the area of space animation, as is with other public spaces in the city, no candidates have presented any proposal in the recent years. The Blue Carpet has rarely been out of the news, and found itself in the middle of several council funding arguments (in the Journal, 7 March 2008), as the idea of an investment for longevity was not considered in this project. Maintenance issues were also the source of a number of misunderstandings and bickering among City Council departments. The special lighting scheme, installed at a cost of £45,000, and with the promise that it would save the council £60,000 over 10 years, ended up costing £3,200 each year in maintenance (in the Journal, 7 March 2008), and its replacement, every two years, requires a delicate process. In 2011, an attack by metal thieves took away large part of the bronze edging that surrounded the space (in the Journal, 12 October, 2011). Harvey

Emms, the council's director of strategic housing, planning and transportation, stated that the council "has maintained the Blue Carpet annually since it was installed, undertaking works identified either through quarterly inspections or as a result of reported damage, vandalism or more recently, theft. Whilst the amounts vary from year to year the day-to-day maintenance cost is in the region of £3,000 to £5,000 per year. This work predominantly relates to the repair and replacement of the tiles themselves." (in Evening Chronicle, 13 October 2011). As a result, the budget for the site only covers the needed physical repairs that from time to time appear as a consequence of the natural degradation of the paving material, situation that is prone to intensify. Even though there is an intention by the Council to improve the space, in order to make it more useable and better integrated in the pedestrian network, the lack of financial resources has been keeping this decision in a standstill. Communication with external agents happens from time to time, situation that is replicated with the communication with the general public.

Nevertheless, the site was broadly acclaimed by art critics, hiding the space's main problems. Opinions ranged from "a pretty quiet public artwork for Heatherwick's standards", to "a very subtle piece, the opposite of urban design", and "mostly a useable public space". However, when moving towards the space's function as a public space, opinions are more critical. In the Council's perspective, the Blue Carpet is an interesting concept, but it stands in a limited route, "in a quiet, dark and cool place", due to the large buildings that surround it, "things happen there, maybe they're not formal things though". To one of the former members of Newcastle City Council urban design team, "the Blue Carpet is probably been pretty much a disaster, in terms of management, and maintenance, and materials… there wasn't a focus on creating a good quality space and moving services and doing it right in one area, it should have started with a small part of money in a wider area.(…) Do it right the first time, and it will pay for itself, just a small area, treat it right. If you don't have the budget for the best materials… you could have spent money in the benches and less on the innovative glass".

5.10.4. Space usage patterns

Pedestrian traffic across the Blue Carpet was identified across six major routes (Figure 5.104). Path identified as number one represents the major link, connecting the city centre on the west to Northumbria University and Manors area on the east. Path number two indicates all traffic to and from the Laing Art Gallery, the only relevant publicly accessible building in the space's edge. Path number three has the task of measuring all traffic to and from the adjacent Higham Pl, the space's most important pedestrian link towards the north, after the adjacent John Dobson street. Paths number four and five measure traffic to and from Newcastle Building society and adjacent office buildings. Finally, path number six specifies all traffic connecting the Blue Carpet with the small alleyway towards the north.

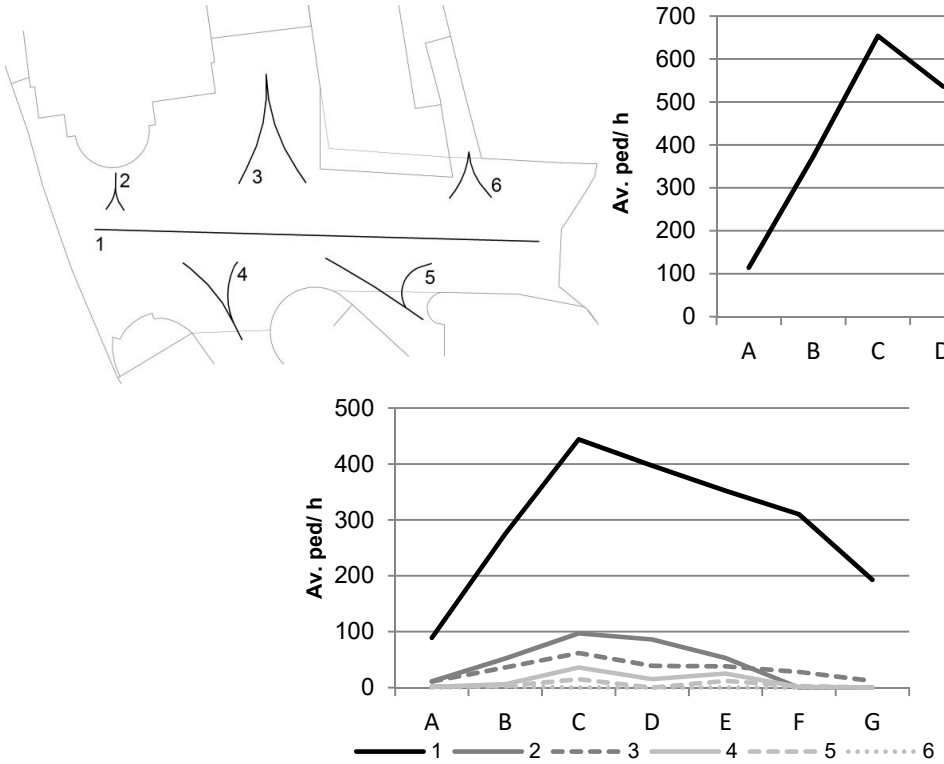


Figure 5.104 – Blue Carpet average daily pedestrian flows

Overall, the Blue Carpet is more strongly used as a pedestrian link during lunch periods, preceded by an increase and followed by a decrease. The east-west cross path is by far the most used one, representing around 75% of the total pedestrian flow across the Blue Carpet. The art gallery, on the other hand, while important in the overall Newcastle art scene is only responsible for a 15% share. Path number three keeps a relative consistency between lunch and late afternoon periods, and the remaining paths are characterized by minimal values.

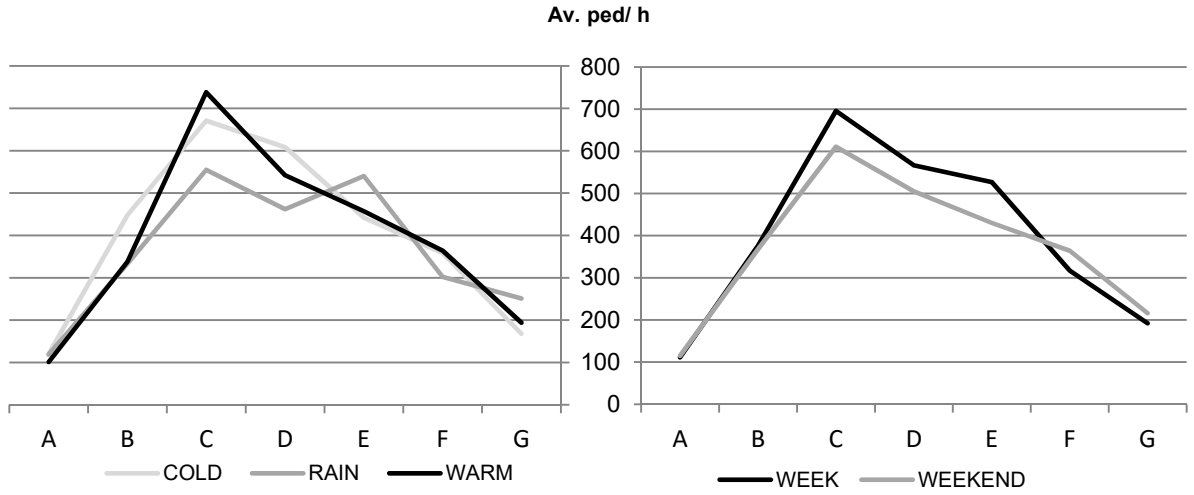


Figure 5.105 – Blue Carpet daily pedestrian flows discriminated

Even though lightly fewer pedestrians characterize rainy days at peak periods, footfall is quite similar regardless of the day or weather conditions, which might be explained by the fact that the Blue Carpet is on the follow-up of the pedestrian footbridge connecting the city centre with the eastern side of the city (Figure 5.105). The lack of any other viable choices makes the crossing of the Blue Carpet the only suitable option for pedestrians, justifying similar values between working days and weekend days. The Laing Art Gallery's closing on Mondays, therefore spanning some of this research's observation days could have also had an influence in the similarities between these two types of assessment days. Nevertheless, it appears acceptable to state that the Laing Art Gallery has little capacity to attract visitors, otherwise stronger differences would have become visible.

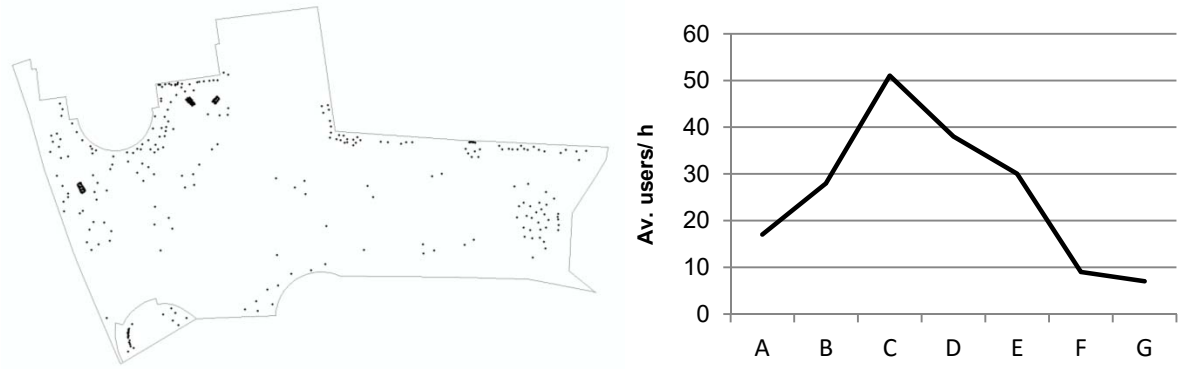


Figure 5.106 – Blue Carpet spatial usage distribution and hourly evolution

The location of the Blue Carpet, away from the main Newcastle City Centre shopping district is responsible for this space's overall lack of success, averaging a total of 50 users per hour over lunch peak periods (Figure 5.106). The scarcity of formal seating across the square, with a focus entirely on its western edge is also responsible for the failure in the achievement of noticeable user fixation. The edge effect is therefore clearly visible, where the space's visual and physical blandness contribute largely. The presence of blank walls, especially along the space's southern edges also justifies the scarcity of users along the Blue Carpet's southern half.

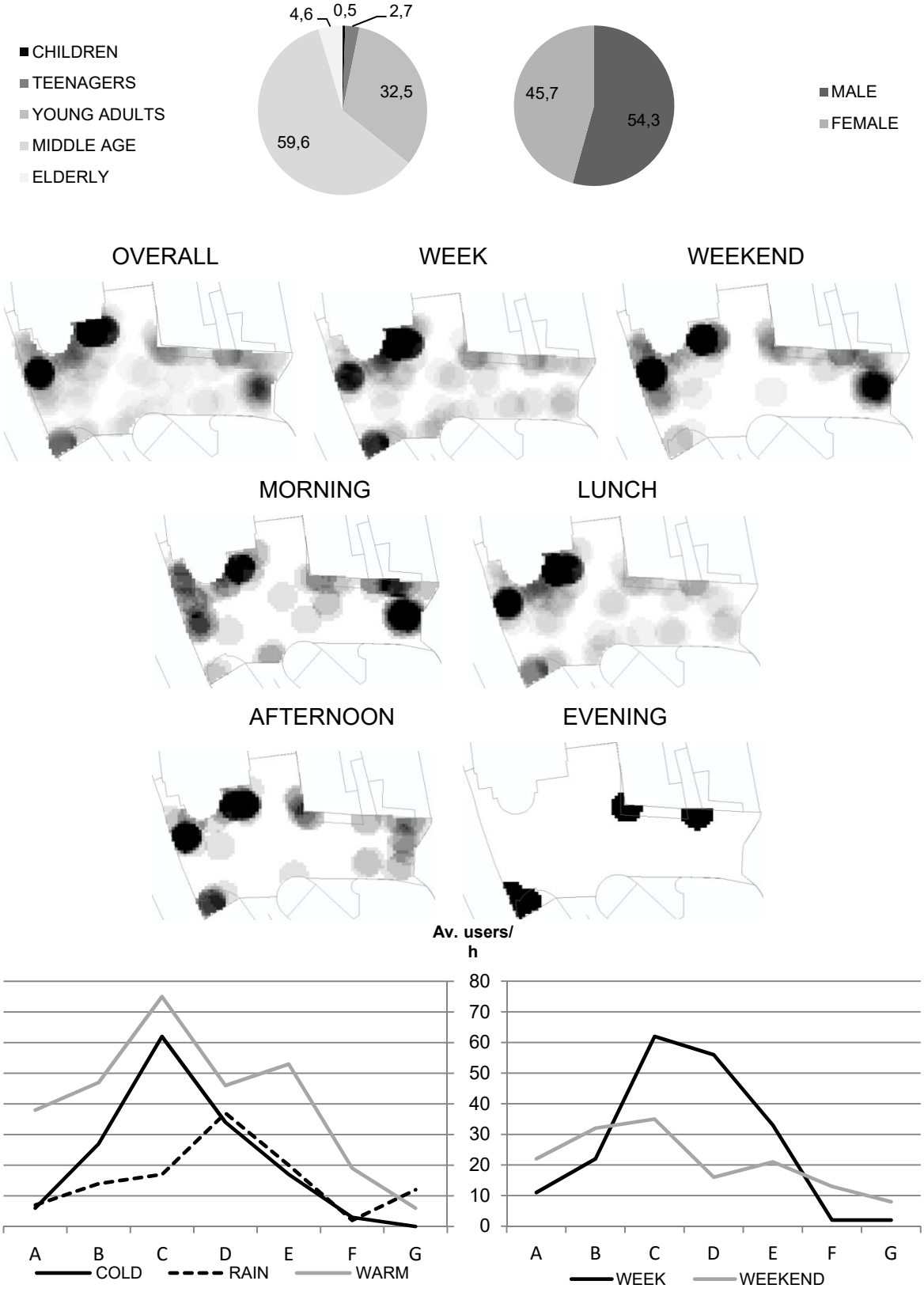


Figure 5.107 – Blue Carpet spatial use patterns

Blue Carpet's user basis is mostly composed of young adults and middle-aged men and women, with the remaining age groups constituting small minorities (Figure 5.107). Weekends show more clearly the space's edge effect, as standing users are more commonly found around the space's central section in working days, particularly during lunch periods. During evenings, usage is reduced to the bare minimum, focused around some edge areas. During peak hours, i.e. lunch, the combination of the three major formal and informal seating locations represents almost 40% of the entire space's user distribution. Still, few users choose the Blue Carpet, as an outdoor public space, to eat their lunches, mainly due to the insufficient formal seating opportunities. For some occasions, it was possible to register this activity on the southern steps of the Newcastle Building Society building and along the southern blank wall of the Laing Art gallery. The large concentration of users at the space's eastern edge during mornings is justified by the proximity of a hotel, just across the street. This turns the Blue Carpet into a natural gathering place, especially during morning hours, for groups of hotel guests who are about to explore the city. Regular weekday usage, characterized by an expressive usage peak during lunch periods, is more intense than in comparison with weekend days, indicating a strong presence of nearby workers in the overall set of the Blue Carpet's users.

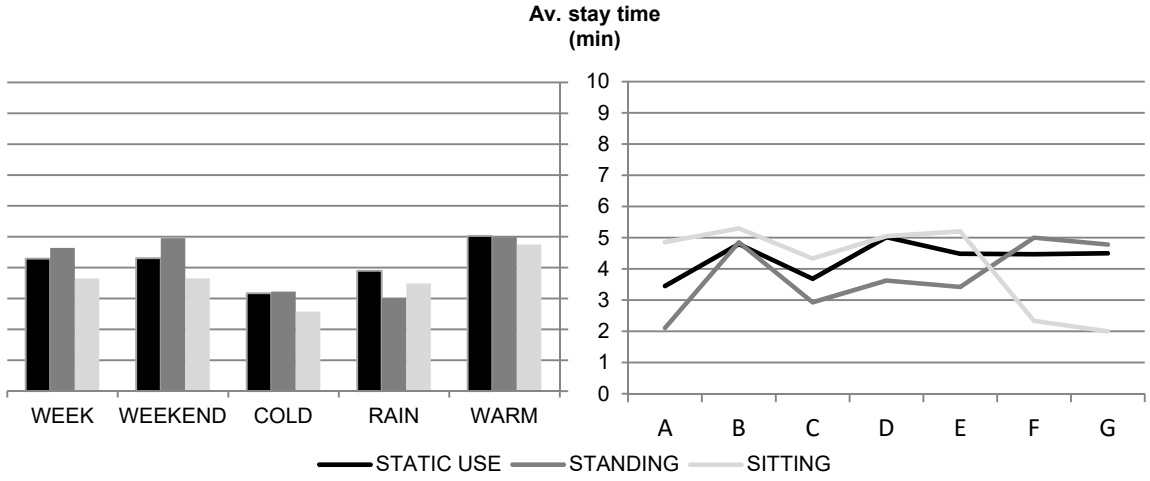


Figure 5.108 – Blue Carpet average stay times

The length of stays in the Blue Carpet is characterized by a relative homogeneity, ranging between three minutes on cold days and five minutes on warmer days, and from three and half minutes on mornings and five minutes during lunch periods (Figure 5.108). The division between weekend and working days, on the other hand, show similar values. While both the activities of sitting and standing are frequently longer during summer months, some particularities have to be mentioned. Standing use is often, on average, of the same duration regardless of the day of the week, and surprisingly with a natural tendency of increase towards the end of the day. Sitting use, on the other hand, follows the opposite tendency, which might be explained by the site's weak lighting scheme, increasing user's feeling of unsafety.

Despite the adjacency of the Laing Art Gallery, and its location on the most suitable pedestrian link between the east city and the central shopping district of Newcastle, the Blue Carpet fails to be a successful public space. While different from other spaces with reduced usage in the city of Newcastle, such as Waterloo Square with its weak integration in the urban structure, this shows that a large number of factors are needed in order to achieve a successful public space.

5.11. CASE STUDY PERFORMANCE TABLES

This section presents the classification of each space features into the adopted scoring scheme for each indicator, in order to interpret the comparison of results of the following chapter.

Table 5.6 – Trindade Metro station square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	3	No intention to restrict uses
a7	Pedestrian flows	3	Heavy pedestrian flows expected
a8	Events/ public animation	3	Strong focus for public events
a9	Blank frontages	1	Blank frontages explicitly created
a10	Public transport/ parking	3	Guarantee public transport on site
b1	Physical access restriction	2	Create one gated entrances
b2	Inclusive design	3	Adopt fully inclusive design
b3	Design to imply use	3	No restrictive urban elements
b4	Hard surface adequacy	3	Adequate all paved surfaces to main pedestrian paths
b5	Physical upkeep	3	Concern for the durability and maintenance of materials
b6	Visual richness	1	Focus on single material
b7	Legibility	2	Moderate concern for the provision of space legibility
b8	Visual connection	3	Provide visual connection to and from all directions
b9	Seating availability	1	No concern for seating provision
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	1	Improvised seating
b12	Interactive elements	1	No provision of interactive elements
b13	Climate comfort	2	Provide protection from rain/sun
b14	Green elements	2	Provide trees
b15	Lighting effectiveness	3	Concern for space's lighting effectiveness
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	2	Concern for trash receptacles availability
b18	Other amenities	2	Amenities available inside station
b19	Bicycle parking	3	Locate bicycle parking facilities by station entrance
b20	Traffic isolation	3	Isolate space from vehicles
c1	Space classification	3	Public space
c5	Safety concern	2	Safety features were achieved from space openness
c7	Comfort concern	2	Comfort seen as a secondary feature
c8	Surprise	2	Foster the creation of a quality site
c9	Value attribution	2	Possibility for the creation of a valuable space
d1	CCTV	3	No CCTV
d2	Staffed security	2	Security personnel inside station
d3	Regard to consumption	3	Include street café area
d6	Articulation with surrounding spaces	3	Project included in city-wide intervention
d7	Attitude towards issues	1	Inability to fully complete project
d8	Inner communication	3	Frequent communication
d9	Outer communication	3	Frequent communication
d10	Community participation	1	No society participation

Table 5.7 - Trindade Metro station square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	3	No visible restriction on uses
a3	Use variety	2	3 visible uses at peak hours
a4	User type heterogeneity	3	Middle-age users average 35% of total
a5	Spatial distribution	1	Use concentrated near station entrance
a6	Stay times	2	Most of stays under 10 minutes
a7	Pedestrian flows	2	Approx. 20 ped./min at peak hours
a8	Events/ public animation	2	1 weekly scheduled event during Summer
a9	Blank frontages	2	28,5% of blank frontages
a10	Public transport/ parking	3	Public transport on site, parking at short distance
b1	Physical access restriction	2	Rooftop garden east entrance restricted
b2	Inclusive design	3	Inclusive design fully adopted
b3	Design to imply use	3	No restrictive urban elements
b4	Hard surface adequacy	3	No visible desire lines
b5	Physical upkeep	2	Few elements of degradation on rooftop garden
b6	Visual richness	1	Focus on a single material
b7	Legibility	2	Entire site visible only on top of stairs
b8	Visual connection	3	Visual connection to all directions
b9	Seating availability	1	No seating
b10	Seating flexibility	2	Fixed seating locations oriented to activity
b11	Seating comfort	1	Improvised seating
b12	Interactive elements	1	No interactive elements
b13	Climate comfort	3	Protection from rain/sun
b14	Green elements/ water	2	Presence of grassed areas
b15	Lighting effectiveness	1	<25% of area properly lit
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	2	Insufficient trash receptacles
b18	Other amenities	2	Other amenities available inside metro station
b19	Bicycle parking	3	Bicycle parking available readily
b20	Traffic isolation	2	Vehicles rarely found on site
c1	User space classification	3	98% of users consider space as public
c2	User freedom feeling	3	74% of users feel free
c3	User assiduity	2	50% are frequent users
c4	User usage opinion	2	36% of users consider space to be properly used
c5	User upkeep opinion	2	50% of users consider proper upkeep
c6	User safety opinion	2	64% of users feel safe at all times
c7	User comfort opinion	2	34% of users consider space as comfortable
c8	User surprise opinion	2	32% of users felt surprised by the space
c9	User value attribution	1	16% of users consider space as valuable
c10	User involvement intention	2	50% of users want to be more involved in its operation
d1	CCTV	3	No CCTV
d2	Staffed security	2	One security guard often at the edge of station
d3	Regard to consumption	1	No consumption amenities
d4	Wi-Fi availability	1	No Wi-Fi
d5	Focus on space animation	2	Management open to event partners
d6	Articulation with surrounding spaces	2	Space animation is coordinated with the Council
d7	Attitude towards issues	2	Management focus on smaller adjustments
d8	Inner communication	3	Frequent inner communication
d9	Outer communication	2	Occasional outer communication
d10	Community participation	2	Occasional society participation

Table 5.8 – D. João I Square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	3	No intention to restrict uses
a7	Pedestrian flows	3	Heavy pedestrian flows expected
a8	Events/ public animation	3	Space designed to be the focus of public events
a9	Blank frontages	3	Eliminate existing blank frontages along northern edge
a10	Public transport/ parking	3	Public transport and parking on site
b1	Physical access restriction	3	Guarantee full physical access
b2	Inclusive design	3	Adopt full inclusive design
b3	Design to imply use	3	No restrictive elements
b4	Hard surface adequacy	3	Hard surface on entire site
b5	Physical upkeep	2	Some materials were selected for its visual features
b6	Visual richness	3	Provide distinct materials and trees
b7	Legibility	3	Provide full legibility
b8	Visual connection	3	Provide visual connection to and from all directions
b9	Seating availability	1	Seating along steps and ledges (no formal seating)
b10	Seating flexibility	2	Fixed seating oriented to central section
b11	Seating comfort	1	Improvised seating
b12	Interactive elements	3	Provide water features, statues and interactive kiosk
b13	Climate comfort	2	Provide protection from rain/sun
b14	Green elements	3	Provide water features and trees
b15	Lighting effectiveness	3	Concern for the provision of a proper lighting scheme
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Distribute trash receptacles across site
b18	Other amenities	1	No concern for additional amenities
b19	Bicycle parking	1	No concern for bicycle parking
b20	Traffic isolation	2	Provide occasional access to vehicles
c1	Space classification	3	Public space
c5	Safety concern	3	Physical features adopted to increase nat. surveillance
c7	Comfort concern	2	Comfort seen as a secondary feature
c8	Surprise	3	Interaction and user experience seen as important
c9	Value attribution	3	Recognition of the space's value
d1	CCTV	3	No CCTV
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Provide street cafés
d6	Articulation with surrounding spaces	3	Project part of European Capital of Culture intervention
d7	Attitude towards issues	2	Some aspects of the project were postponed
d8	Inner communication	3	Frequent communication
d9	Outer communication	3	Frequent communication
d10	Community participation	2	Occasional society participation

Table 5.9 – D. João I Square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	3	No visible restriction on uses
a3	Use variety	2	3 distinct uses at peak hours
a4	User type heterogeneity	2	Middle-age users average 46% of total
a5	Spatial distribution	2	Aprox. 50% of space is left unused
a6	Stay times	2	Majority of stays under 10 minutes
a7	Pedestrian flows	2	Aprox. 10 ped./min at peak hours
a8	Events/ public animation	3	> 1 weekly event during Summer
a9	Blank frontages	2	32% of blank frontages
a10	Public transport/ parking	3	Public transport and parking on-site
b1	Physical access restriction	3	No physical access restrictions
b2	Inclusive design	3	Inclusive design fully adopted
b3	Design to imply use	3	No restrictive urban elements
b4	Hard surface adequacy	3	No visible desire lines
b5	Physical upkeep	2	Few elements of degradation (graffiti, bollard control)
b6	Visual richness	3	Distinct materials and use of trees
b7	Legibility	3	Easily understandable physical structure
b8	Visual connection	3	Visual connection to and from all directions
b9	Seating availability	1	No formal seating
b10	Seating flexibility	2	Fixed seating locations oriented to activity
b11	Seating comfort	1	Improvised seating
b12	Interactive elements	1	No interactive elements
b13	Climate comfort	3	Effective protection from rain/sun and wind
b14	Green elements	2	Presence of trees
b15	Lighting effectiveness	2	Some section under poor lighting conditions
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	2	Trash receptacles in insufficient number
b18	Additional amenities	1	No additional amenities
b19	Bicycle parking	1	No bicycle parking facilities
b20	Traffic isolation	1	Vehicles often found on site
c1	User space classification	3	98% classify space as public
c2	User freedom feeling	3	82% of users feel free
c3	User assiduity	2	38% are frequent users
c4	User usage opinion	1	16% consider proper usage
c5	User upkeep opinion	1	26% consider proper upkeep
c6	User safety opinion	3	76% of users feel safe at all times
c7	User comfort opinion	1	6% feel comfortable
c8	User surprise opinion	2	44% of users felt surprised
c9	User value attribution	2	38% of users give special value
c10	User involvement intention	2	60% of users want to be more involved in its operation
d1	CCTV	2	Two CCTV cameras
d2	Staffed security	3	No staffed security presence
d3	Regard to consumption	3	Café areas on north-western edge
d4	Wi-Fi availability	2	Wi-Fi available in some sections
d5	Focus on space animation	3	Management is actively searching for events
d6	Articulation with surrounding spaces	3	Space managed in network with other public spaces
d7	Attitude towards issues	2	Focus on basic management aspects
d8	Inner communication	2	Occasional communication
d9	Outer communication	2	Occasional communication
d10	Community participation	2	Occasional participation

Table 5.10 – Cardosas square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	2	With operation schedule
a2	Use restriction	2	Restrict uses which could hamper the site condition
a7	Pedestrian flows	2	Moderate pedestrian flows expected
a8	Events/ public animation	2	Create conditions for public events
a9	Blank frontages	2	Open ground floor to square area when possible
a10	Public transport/ parking	3	Parking and public transport on-site
b1	Physical access restriction	1	Gate all entrances
b2	Inclusive design	2	Provide inclusive alternatives to access upper level
b3	Design to imply use	3	No restrictive urban elements
b4	Hard surface adequacy	3	Adequate paved surfaces to main pedestrian paths
b5	Physical upkeep	3	Concern for the durability and maintenance of materials
b6	Visual richness	3	Provide distinct materials and trees
b7	Legibility	2	Legibility was not a main concern
b8	Visual connection	1	Provide visual connection to at least one direction
b9	Seating availability	2	Provide formal seating in limited locations
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	3	Seating with back rests
b12	Interactive elements	3	Provide water features and public artwork elements
b13	Climate comfort	2	Provide protection from wind
b14	Green elements	3	Provide water features and trees
b15	Lighting effectiveness	3	Concern regarding space's lighting effectiveness
b16	Fencing delimitation	2	Provide see-through fencing at entrances
b17	Trash receptacles	2	Lack of trash receptacles on upper level
b18	Other amenities	2	Other amenities available at parking garage and station
b19	Bicycle parking	1	No bicycle parking facilities
b20	Traffic isolation	3	Fully isolate space from vehicles
c1	Space classification	2	Semi-public space
c5	Safety concern	3	Safety viewed as an important aspect
c7	Comfort concern	3	Comfort seen as an essential feature
c8	Surprise	3	Foster interaction and user experience
c9	Value attribution	2	Possibility to create a valuable space
d1	CCTV	3	No CCTV
d2	Staffed security	2	Security guard presence
d3	Regard to consumption	3	Allocate space for street cafés
d6	Articulation with surrounding spaces	2	Articulated with full city block intervention
d7	Attitude towards issues	3	All issues were quickly dealt with
d8	Inner communication	3	Frequent communication
d9	Outer communication	3	Frequent communication
d10	Community participation	1	No society participation

Table 5.11 – Cardosas square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	2	With operation schedule
a2	Use restriction	3	No visible restriction on uses
a3	Use variety	2	2 visible uses at peak hours
a4	User type heterogeneity	1	> 60% of middle-age users
a5	Spatial distribution	2	Aprox. 50% of space used at peak hours
a6	Stay times	2	Majority of stays under 10 minutes
a7	Pedestrian flows	1	Aprox. 2 ped./min at peak hours
a8	Events/ public animation	2	1 scheduled weekly event during Summer
a9	Blank frontages	1	60 % of blank frontages
a9*	Blank frontages SCENARIO	3	26 % of blank frontages
a10	Public transport/ parking	3	Public transport and parking on-site
b1	Physical access restriction	1	All entrances restricted
b2	Inclusive design	2	Ramp to access upper level, not clearly visible
b3	Design to imply use	3	No restrictive design elements
b4	Hard surface adequacy	3	No visible desire lines
b5	Physical upkeep	2	Few elements of degradation on adjacent buildings
b6	Visual richness	3	Distinct materials and use of green elements
b7	Legibility	2	Physical structure understandable from upper level
b8	Visual connection	1	Visual connection to and from only one direction
b9	Seating availability	3	Seating available at all times
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	3	Seating with back rests
b12	Interactive elements	2	Several elements of artwork
b12*	Interactive elements SCENARIO	3	Water features, several elements of artwork
b13	Climate comfort	2	Protection from wind
b14	Green elements/ water	2	Grass, bushes and trees
b14*	Green el./ water SCENARIO	3	Water features, grass, bushes and trees
b15	Lighting effectiveness	2	Certain sections poorly lit
b16	Fencing delimitation	2	See-through fencing at space entrances
b17	Trash receptacles	2	Trash receptacles available only in lower level
b18	Other amenities	2	Toilets available inside parking garage
b19	Bicycle parking	1	No bicycle parking facilities
b20	Traffic isolation	3	No vehicles on site at any times
c1	User space classification	2	66% of users classify space as public
c2	User freedom feeling	2	50% of users feel free
c3	User assiduity	1	12% are frequent users
c4	User usage opinion	1	18% of users consider proper usage
c5	User overall opinion	3	74% considered space properly maintained
c6	User safety opinion	3	76% of users feel free at all times
c7	User comfort opinion	2	36% of users feel comfortable
c8	User surprise opinion	3	74% of users felt surprised by the space
c9	User value attribution	1	28% of users consider space as valuable
c10	User involvement intention	2	56% of users want to be more involved in its operation
d1	CCTV	3	No CCTV
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Small section dedicate to street café
d4	Wi-Fi availability	1	No Wi-Fi
d5	Focus on space animation	2	Management open to event partners
d6	Articulation with surrounding spaces	1	Space managed in isolation
d7	Attitude towards issues	3	Immediate action to solve operational issues
d8	Inner communication	3	Frequent communication
d9	Outer communication	2	Occasional communication
d10	Community participation	1	No community participation

Table 5.12 – Lisboa Square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	2	With operation schedule on upper level
a2	Use restriction	2	Restrict uses that would not be consider adequate
a7	Pedestrian flows	3	Heavy pedestrian flows expected
a8	Events/ public animation	2	Create conditions for public events
a9	Blank frontages	3	Avoid the creation of blank frontages
a10	Public transport/ parking	3	Guarantee parking on site/ public transport nearby
b1	Physical access restriction	2	Two gated entrances to upper level
b2	Inclusive design	2	Provide alternatives to access upper level
b3	Design to imply use	3	No restrictive urban elements
b4	Hard surface adequacy	3	Adequate all paved surface to pedestrian paths
b5	Physical upkeep	3	Concern for the durability and maintenance of materials
b6	Visual richness	3	Provide distinct materials and green elements
b7	Legibility	2	Full space legibility only from upper level
b8	Visual connection	2	Visual to 2 directions on lower level and 4 on upper
b9	Seating availability	2	Moderate concern for seating provision on upper level
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	2	Seating without back rests
b12	Interactive elements	1	No interactive elements
b13	Climate comfort	3	Provide protection from sun/rain and wind on lower level
b14	Green elements	2	Provide trees on lower level
b15	Lighting effectiveness	3	Concern for he space's lighting effectiveness
b16	Fencing delimitation	2	See-through fencing on lower level
b17	Trash receptacles	2	Provision of trash receptacles on lower level only
b18	Other amenities	2	Other amenities would be available nearby
b19	Bicycle parking	1	No concern for bicycle parking facilities
b20	Traffic isolation	3	Isolate space from vehicles
c1	Space classification	2	Semi-public space
c5	Safety concern	3	Space openness was decided for safety reasons
c7	Comfort concern	3	Comfort seen as an essential feature
c8	Surprise	2	Intention to create a quality site
c9	Value attribution	3	Recognition of the importance of the space's value
d1	CCTV	3	No CCTV
d2	Staffed security	2	Security guard
d3	Regard to consumption	3	Street cafés on both levels and vending kiosk on upper
d6	Articulation with surrounding spaces	2	Project included in full city block intervention
d7	Attitude towards issues	3	All issues were quickly dealt with
d8	Inner communication	3	Frequent communication
d9	Outer communication	3	Frequent communication
d10	Community participation	1	No community participation

Table 5.13 – Lisboa Square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	1	Section permanently closed
a1*	Operation hours SCENARIO	2	With operation schedule
a2	Use restriction	3	No visible restriction on uses
a3	Use variety	2	3 visible uses at peak
a4	User type heterogeneity	2	46% of young adults on average
a5	Spatial distribution	1	Only lower section used (<25% of total area)
a5*	Spatial distribution SCENARIO	2	Expected usage increase (aprox. 50% of total area)
a6	Stay times	3	Majority of stays over 10 minutes
a7	Pedestrian flows	2	Aprox. 5 ped./min at peak hours
a8	Events/ public animation	1	No scheduled events during Summer
a9	Blank frontages	2	Over 50% of blank frontages at the time of assessment
a9*	Blank frontages SCENARIO	3	11,7% of blank frontages on lower level
a10	Public transport/ parking	3	Parking on site and public transport at short distance
b1	Physical access restriction	2	Gated entrances to upper level
b2	Inclusive design	2	Only one accessible entrance to upper level
b3	Design to imply use	3	No restrictive design elements
b4	Hard surface adequacy	3	No visible desire lines
b5	Physical upkeep	3	No visible signs of degradation
b6	Visual richness	3	Distinct materials and green elements
b7	Legibility	2	Physical structure fully understood from upper level only
b8	Visual connection	2	Visual connection to two directions on lower level
b9	Seating availability	1	No formal seating
b10	Seating flexibility	2	Informal seating is oriented to activity
b11	Seating comfort	1	Improvised seating along steps
b12	Interactive elements	1	No interactive elements
b13	Climate comfort	3	Effective protection from rain/sun and wind on lower level
b14	Green elements	2	Presence of trees on upper level
b15	Lighting effectiveness	3	Entire space properly lit
b16	Fencing delimitation	2	See-through fencing on upper level
b17	Trash receptacles	1	No trash receptacles
b18	Other amenities	2	Other amenities available at nearby public spaces
b19	Bicycle parking	1	No bicycle parking
b20	Traffic isolation	3	No vehicles on site at any time
c1	User space classification	2	60 % of users consider space as public
c2	User freedom feeling	1	28 % of users feel free in the space
c3	User assiduity	1	20 % are frequent users
c4	User usage opinion	2	64 % of users consider space properly used
c5	User upkeep opinion	3	90 % of users consider proper upkeep
c6	User safety opinion	3	84 % of users feel free in the space at all times
c7	User comfort opinion	2	32 % of users feel comfortable in the space
c8	User surprise opinion	3	94 % of users felt surprised by the space
c9	User value attribution	2	46 % of users consider space as valuable
c10	User involvement intention	2	44 % of users want to be more involved in its operation
d1	CCTV	3	No CCTV
d2	Staffed security	2	One security guard
d3	Regard to consumption	3	Small section dedicated to street café
d4	Wi-Fi availability	2	Wi-Fi available at certain locations
d5	Focus on space animation	2	Management is open to event partners
d6	Articulation with surrounding spaces	2	Brief articulation with the nearby Clérigos tower
d7	Attitude towards issues	3	Immediate action to solve operational issues
d8	Inner communication	3	Frequent communication
d9	Outer communication	2	Occasional communication
d10	Community participation	2	Occasional participation

Table 5.14 – Times Square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	2	Restrict uses which interfere with regular operation
a7	Pedestrian flows	3	Heavy pedestrian flows expected
a8	Events/ public animation	1	No focus for public events
a9	Blank frontages	3	Avoid the creation of blank frontages
a10	Public transport/ parking	3	Public transport on site, parking at short distance
b1	Physical access restriction	3	Guarantee full physical access
b2	Inclusive design	2	Accessible alternative entrance to Bioscience Centre
b3	Design to imply use	3	No restrictive urban elements
b4	Hard surface adequacy	3	No soft surface creation
b5	Physical upkeep	3	Concern for the durability and maintenance of materials
b6	Visual richness	3	Provide distinct materials and use of green elements
b7	Legibility	2	Market keeper's cottage would create a visual barrier
b8	Visual connection	2	Visual connection to and from 2 directions
b9	Seating availability	3	Provide seating at regular intervals
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	3	Seating with back rests
b12	Interactive elements	1	No provision of interactive elements
b13	Climate comfort	2	Provide protection from rain/sun
b14	Green elements	2	Provide trees
b15	Lighting effectiveness	3	Concern for space's lighting effectiveness
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Install trash receptacles on entrances and seating areas
b18	Other amenities	2	Other amenities available nearby (Life Centre)
b19	Bicycle parking	3	Install bicycle parking at space entrances
b20	Traffic isolation	2	Provide occasional access to vehicles
c1	Space classification	2	Semi-public space
c5	Safety concern	2	Space openness would contribute to its safety
c7	Comfort concern	3	Comfort seen as an essential feature
c8	Surprise	2	Intention to create of a quality site
c9	Value attribution	3	Intention to create a valuable space
d1	CCTV	1	Strong concern for the installation of CCTV
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Dedicate small section to street café
d6	Articulation with surrounding spaces	3	Project included in an area-wide urban regeneration
d7	Attitude towards issues	2	Funding difficulties were constant through project
d8	Inner communication	3	Frequent communication
d9	Outer communication	3	Occasional communication
d10	Community participation	2	Occasional society participation

Table 5.15 – Times Square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	2	Smoking restricted on certain sections
a3	Use variety	3	4 visible uses at peak hours
a4	User type heterogeneity	2	57% of middle-age users on average
a5	Spatial distribution	2	Users concentrate on edges and street café sections
a6	Stay times	2	Most of stays under 10 minutes
a7	Pedestrian flows	2	Aprox. 14 ped./min at peak hours
a8	Events/ public animation	1	Only a handful of events throughout year
a9	Blank frontages	3	< 20% of blank frontages
a10	Public transport/ parking	3	Public transport on site, parking at short distance
b1	Physical access restriction	3	No physical access restrictions
b2	Inclusive design	2	Accessible entrance to Bio Centre not clearly visible
b3	Design to imply use	3	No restrictive urban furniture
b4	Hard surface adequacy	3	No grass areas
b5	Physical upkeep	3	No visible signs of degradation
b6	Visual richness	2	Low variety of materials over central section
b7	Legibility	2	Market keeper's cottage limits full space legibility
b8	Visual connection	2	Visual connection to and from 2 directions
b9	Seating availability	2	Seating full at peak hours
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	3	Seating with back rests
b12	Interactive elements	2	DNA helix is the only interactive element
b13	Climate comfort	2	Protection from rain/sun, ineffective from wind
b14	Green elements	2	Presence of trees
b15	Lighting effectiveness	3	Entire space properly lit
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Trash receptacles in sufficient number
b18	Other amenities	2	Other amenities available inside Life Centre
b19	Bicycle parking	3	Available bicycle parking facilities
b20	Traffic isolation	2	Vehicles rarely found on site
c1	User space classification	3	76 % of users consider space as public
c2	User freedom feeling	2	62 % of users feel free in the space
c3	User assiduity	1	28 % are frequent users
c4	User usage opinion	2	36 % of users consider space properly used
c5	User upkeep opinion	3	90 % of users consider proper upkeep
c6	User safety opinion	3	74 % of users feel safe in the space at all times
c7	User comfort opinion	2	56 % of users feel comfortable in the space
c8	User surprise opinion	2	32 % of users felt surprised by the space
c9	User value attribution	1	28 % of users consider space as valuable
c10	User involvement intention	2	34 % of users want to be more involved in its operation
d1	CCTV	1	Easily visible CCTV cameras throughout site
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Small section dedicated to street cafés
d4	Wi-Fi availability	2	Wi-Fi restricted to 'eduroam' members
d5	Focus on space animation	2	Management receptive to event partners
d6	Articulation with surrounding spaces	2	Security and events are articulated with other spaces
d7	Attitude towards issues	3	Immediate action to solve operational issues
d8	Inner communication	3	Frequent communication
d9	Outer communication	2	Communication only exists when needed
d10	Community participation	2	Occasional communication

Table 5.16 – Waterloo Square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	2	Restrict uses which could collide with the owner's interests
a7	Pedestrian flows	3	Heavy pedestrian flows expected
a8	Events/ public animation	2	Create conditions for a social site
a9	Blank frontages	3	Avoid the creation of blank frontages
a10	Public transport/ parking	3	Parking on site/ public transport at short distance
b1	Physical access restriction	3	No physical access restrictions
b2	Inclusive design	3	Adopt full inclusive design
b3	Design to imply use	3	No restrictive urban furniture
b4	Hard surface adequacy	3	No grass areas
b5	Physical upkeep	3	Concern for the durability and maintenance of materials
b6	Visual richness	3	Provide distinct materials and green elements
b7	Legibility	2	Full legibility would be restricted by topography
b8	Visual connection	2	Visual connection in two directions
b9	Seating availability	1	No seating provision
b10	Seating flexibility	2	Informal seating locations oriented to activity
b11	Seating comfort	1	Improvised seating
b12	Interactive elements	1	No interactive elements
b13	Climate comfort	1	No concern for the provision of climatic comfort
b14	Green el./ water	2	Provide trees
b15	Lighting effectiveness	3	Concern for the space's lighting effectiveness
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Locate trash receptacles at space main entrances
b18	Other amenities	1	No concern for other amenities
b19	Bicycle parking	3	Provide bicycle parking at space entrances
b20	Traffic isolation	2	Provide occasional access to delivery vehicles
c1	Space classification	2	Semi-public spaces
c5	Safety concern	3	Space was designed with a safety concern in mind
c7	Comfort concern	2	Comfort was seen as a secondary feature
c8	Surprise	2	Goal to create a valuable site due to its features
c9	Value attribution	2	Possibility of the creation of a valuable space
d1	CCTV	3	No CCTV
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Dedicate small section to street café
d6	Articulation with surrounding spaces	2	Project included in full city block redevelopment
d7	Attitude towards issues	3	All issues were quickly dealt with
d8	Inner communication	3	Frequent communication
d9	Outer communication	2	Occasional communication
d10	Community participation	3	Strong society participation

Table 5.17 – Waterloo Square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	2	Skateboarding restriction
a3	Use variety	1	1 visible use at peak hours
a4	User type heterogeneity	2	51% of Middle-age users on average
a5	Spatial distribution	2	Use focused around steps and bollard areas
a6	Stay times	1	Mainly a movement-only space
a7	Pedestrian flows	1	Aprox. 2 ped./min at peak hours
a8	Events/ public animation	1	No scheduled public events
a9	Blank frontages	3	< 10% of blank frontages
a10	Public transport/ parking	3	Parking on-site/ public transport at short distance
b1	Physical access restriction	3	No physical access restrictions
b2	Inclusive design	3	Full inclusive design
b3	Design to imply use	3	No restrictive urban furniture
b4	Hard surface adequacy	3	No grassed areas
b5	Physical upkeep	2	Some signs of lack of cleaning and broken LED lighting
b6	Visual richness	3	High variety of materials and green elements
b7	Legibility	2	Full structure visible from certain locations only
b8	Visual connection	2	Visual connection to and from two directions
b9	Seating availability	1	No formal seating
b10	Seating flexibility	2	Informal seating oriented to activity
b11	Seating comfort	1	Informal seating
b12	Interactive elements	2	Bollards act as interactive elements by children
b13	Climate comfort	2	Effective wind protection in comparison to adjacent area
b14	Green elements	2	Trees and small bushes
b15	Lighting effectiveness	3	Entire space properly lit
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Trash receptacles readily available
b18	Other amenities	1	No additional amenities
b19	Bicycle parking	3	Bicycle parking available
b20	Traffic isolation	2	Vehicles rarely found on site
c1	User space classification	3	76 % of users consider space as public
c2	User freedom feeling	3	72 % of users feel free in the space
c3	User assiduity	1	26 % are frequent users
c4	User usage opinion	1	22 % of users consider space properly used
c5	User upkeep opinion	3	92 % of users consider proper upkeep
c6	User safety opinion	3	96 % of users feel safe in the space at all times
c7	User comfort opinion	1	26 % of users feel comfortable in the space
c8	User surprise opinion	2	34 % of users felt surprised by the space
c9	User value attribution	1	20 % of users consider space as valuable
c10	User involvement intention	2	34 % of users want to be more involved in its operation
d1	CCTV	1	CCTV cameras easily visible
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Small section dedicated to street café
d4	Wi-Fi availability	1	No Wi-Fi
d5	Focus on space animation	1	Management has no interest for public events
d6	Articulation with surrounding spaces	1	Space managed in isolation
d7	Attitude towards issues	1	Inability to provide proper maintenance
d8	Inner communication	2	Occasional inner communication
d9	Outer communication	1	No communication with outer agents
d10	Community participation	1	No society participation

Table 5.18 – Old Eldon Square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	3	No intention to restrict uses
a7	Pedestrian flows	3	Heavy pedestrian flows expected
a8	Events/ public animation	1	No focus for public events, other suitable spaces nearby
a9	Blank frontages	3	Avoid the creation of blank frontages
a10	Public transport/ parking	3	Public transport on site, parking at short distance
b1	Physical access restriction	3	No physical access restriction
b2	Inclusive design	3	Inclusive design fully adopted
b3	Design to imply use	2	Maintain railings on square edge
b4	Hard surface adequacy	3	Adequate paved surfaces to pedestrian paths
b5	Physical upkeep	3	Concern for the durability and maintenance of materials
b6	Visual richness	3	Provide distinct materials and green elements
b7	Legibility	3	Provide full space legibility
b8	Visual connection	2	Provide visual connection to and from 2 directions
b9	Seating availability	3	Strong concern for seating provision
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	3	Seating with back rests
b12	Interactive elements	3	War memorial, informative and regiment plaques
b13	Climate comfort	2	Provide protection from rain/sun
b14	Green elements	2	Provide trees
b15	Lighting effectiveness	3	Concern for space's lighting effectiveness
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Provide trash receptacles along main seating areas
b18	Other amenities	2	Public toilets available at shopping centre
b19	Bicycle parking	3	Provide bicycle parking at space entrances
b20	Traffic isolation	2	Allow for occasional presence of delivery vehicles
c1	Space classification	3	Public spaces
c5	Safety concern	3	Concern for space's safety increase
c7	Comfort concern	3	Comfort viewed as an essential feature
c8	Surprise	2	Foster the creation of a quality site
c9	Value attribution	3	Recognition of the space's symbolic value
d1	CCTV	1	Strong concern for the provision of CCTV
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Dedicate space edges to street cafés
d6	Articulation with surrounding spaces	2	Project articulated with shopping centre redevelopment
d7	Attitude towards issues	3	All issues were quickly dealt with
d8	Inner communication	3	Frequent communication
d9	Outer communication	3	Frequent communication
d10	Community participation	3	Strong society participation including interest groups

Table 5.19 – Old Eldon Square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	3	No visible use restriction, apart from alcohol drinking
a3	Use variety	3	4 visible uses at peak hours
a4	User type heterogeneity	3	Aprox. 30% of middle-age and young adult users on av.
a5	Spatial distribution	3	> 75% of space used at peak hours
a6	Stay times	3	Majority of stays over 10 minutes
a7	Pedestrian flows	3	Over 65 ped./min at peak hours
a8	Events/ public animation	1	No scheduled public events
a9	Blank frontages	2	20% of blank frontages
a10	Public transport/ parking	3	Public transport on site/ parking at short distance
b1	Physical access restriction	3	No physical access restrictions
b2	Inclusive design	3	Inclusive design fully adopted
b3	Design to imply use	2	Railings preventing seating on ledges/ around memorial
b4	Hard surface adequacy	2	Some desire lines visible close to the central section
b5	Physical upkeep	3	No visible signs of degradation
b6	Visual richness	3	Large variety of materials, green elements
b7	Legibility	3	Full space legibility
b8	Visual connection	2	Visual connection to and from 2 directions
b9	Seating availability	2	Seating available most of the times
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	3	Seating with back rests
b12	Interactive elements	3	War memorial, historical and regiment plaques
b13	Climate comfort	2	Protection from sun/ rain
b14	Green elements	2	Trees and grass
b15	Lighting effectiveness	3	Entire space properly lit
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Trash receptacles in sufficient number
b18	Other amenities	2	Public toilets available inside shopping centre
b19	Bicycle parking	3	Bicycle parking often full
b20	Traffic isolation	1	Vehicles often found on site
c1	User space classification	3	100 % of users consider space as public
c2	User freedom feeling	3	88 % of users feel free in the space
c3	User assiduity	1	8 % are frequent users
c4	User usage opinion	3	82 % of users consider space properly used
c5	User upkeep opinion	3	84 % of users consider proper upkeep
c6	User safety opinion	3	76 % of users feel safe in the space at all times
c7	User comfort opinion	3	98 % of users feel comfortable in the space
c8	User surprise opinion	2	32 % of users felt surprised by the space
c9	User value attribution	2	42 % of users consider space as valuable
c10	User involvement intention	2	52 % of users want to be more involved in its operation
d1	CCTV	1	CCTV cameras easily visible
d2	Staffed security	3	No staffed security
d3	Regard to consumption	3	Five street cafés at edges, presence of street vendors
d4	Wi-Fi availability	1	No Wi-Fi availability
d5	Focus on space animation	1	No scheduled public events
d6	Articulation with surrounding spaces	3	Space managed in network
d7	Attitude towards issues	3	Immediate action to solve issues
d8	Inner communication	2	Occasional communication, only when issues appear
d9	Outer communication	2	Occasional communication
d10	Community participation	2	Occasional society participation

Table 5.20 – Blue Carpet Square: project stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	3	No intention to restrict uses
a7	Pedestrian flows	2	Moderate pedestrian flows expected
a8	Events/ public animation	3	Strong focus for public events
a9	Blank frontages	1	No concern for blank frontages
a10	Public transport/ parking	3	Public transport on-site
b1	Physical access restriction	3	No physical access restriction
b2	Inclusive design	3	Inclusive design fully adopted
b3	Design to imply use	3	No restrictive urban elements
b4	Hard surface adequacy	3	No grass surfacing
b5	Physical upkeep	2	Moderate concern for the durability of paving material
b6	Visual richness	3	Provide distinct and original materials and trees
b7	Legibility	3	Provide full space legibility
b8	Visual connection	2	Provide visual connection to and from 3 directions
b9	Seating availability	3	Provide seating along space
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	2	Seating without back rests
b12	Interactive elements	2	Interactive elements through the space's furniture
b13	Climate comfort	2	Provide protection from rain/sun through trees
b14	Green elements	2	Provide trees
b15	Lighting effectiveness	3	Concern for space's lighting effectiveness
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Install trash receptacles on space's entrances
b18	Other amenities	1	No concern for other amenities
b19	Bicycle parking	3	Provide bicycle parking close to museum entrance
b20	Traffic isolation	2	Provide occasional access to vehicles
c1	Space classification	3	Public space
c5	Safety concern	2	Safety features were viewed as secondary
c7	Comfort concern	3	Comfort seen as an essential feature
c8	Surprise	3	Design adopted to foster interaction and surprise
c9	Value attribution	3	Intention to create a valuable space
d1	CCTV	2	Moderate concern for the provision of CCTV
d2	Staffed security	3	No security personnel
d3	Regard to consumption	3	Dedicate sections to consumption space
d6	Articulation with surrounding spaces	1	Project developed in isolation
d7	Attitude towards issues	3	Strong commitment in order to fulfil the artist's vision
d8	Inner communication	3	Frequent communication
d9	Outer communication	3	Frequent communication
d10	Community participation	3	Strong community participation

Table 5.21 – Blue Carpet Square: operation stage publicness characterization

Indicator		Score	Description
a1	Operation hours	3	Open 24/7
a2	Use restriction	2	Skateboarding and bicycle riding prohibited
a3	Use variety	2	3 visible uses at peak hours
a4	User type heterogeneity	2	Approx. 30% of middle-aged users
a5	Spatial distribution	2	Users concentrate on space edges and near benches
a6	Stay times	2	Majority of stays under 10 minutes
a7	Pedestrian flows	2	Approx. 12 ped./min at peak hours
a8	Events/ public animation	1	No scheduled public events
a9	Blank frontages	2	Approx. 15% of blank frontages
a10	Public transport/ parking	3	Public transport on-site
b1	Physical access restriction	3	No physical access restrictions
b2	Inclusive design	3	Inclusive design fully adopted
b3	Design to imply use	3	No restrictive urban furniture
b4	Hard surface adequacy	3	No soft surfacing
b5	Physical upkeep	2	Some elements of degradation across pavement
b6	Visual richness	2	Low variety of materials, even with trees
b7	Legibility	3	Easily understandable physical structure
b8	Visual connection	2	Visual connection to and from 3 directions
b9	Seating availability	3	Seating available at all times
b10	Seating flexibility	2	Fixed seating oriented to activity
b11	Seating comfort	2	Seating without back rests
b12	Interactive elements	1	No interactive elements
b13	Climate comfort	2	Protection from rain/sun through trees
b14	Green elements	2	Presence of large trees
b15	Lighting effectiveness	2	Some sections are poorly lit
b16	Fencing delimitation	3	No fencing delimitation
b17	Trash receptacles	3	Trash receptacles n sufficient number
b18	Other amenities	2	Public toilets available inside art gallery building
b19	Bicycle parking	3	Bicycle parking available at all times
b20	Traffic isolation	2	Vehicles often found on site
c1	User space classification	3	92 % of users consider space as public
c2	User freedom feeling	3	92 % of users feel free in the space
c3	User assiduity	1	26 % are frequent users
c4	User usage opinion	2	65 % of users consider space properly used
c5	User upkeep opinion	2	66 % of users consider proper upkeep
c6	User safety opinion	2	32 % of users feel space in the space at all times
c7	User comfort opinion	2	60 % of users feel comfortable in the space
c8	User surprise opinion	2	40 % of users felt surprised by the space
c9	User value attribution	2	40 % of users consider space as valuable
c10	User involvement intention	2	54 % of users want to be more involved in its operation
d1	CCTV	1	CCTV cameras easily visible
d2	Staffed security	3	No security guard presence
d3	Regard to consumption	1	No areas dedicated to consumption
d4	Wi-Fi availability	1	No Wi-Fi availability
d5	Focus on space animation	2	Management receptive to event partners
d6	Articulation with surrounding spaces	2	Some aspects of nearby spaces taken into consideration
d7	Attitude towards issues	1	Inability to maintain pavement material
d8	Inner communication	2	Occasional communication, dependant on space issues
d9	Outer communication	2	Occasional communication
d10	Community participation	2	Occasional society participation

5.12. SUMMARY

These eight case studies, although sharing the role of operating as urban squares in central city locations, are characterized by particular functional and design features quintessential in determining its success.

Trindade station Square, while combining a focus on a minimalist design by a worldly renowned architect with a strong functional connection with an important transport infrastructure, is strongly affected by an overall lack of comfort conditions, steering users away from what could have been a successful space. The project's funding limitations, reducing the possibilities for use and the liveliness of its edges, were also decisive in limiting its success as a quality public space. Although pedestrianization efforts in order to return the city's public spaces to its citizens are a common strategy in urban renovation efforts, other measures must merge into more complex approaches. The absence of street cafés, although often overlooked, can indeed dictate the perceived failure of an intervention, as was the case with D. João I and Waterloo Squares. Animation policies, on the other hand, can be important to enliven the space in a temporary basis, but as seen in Old Eldon Square, are not pivotal to the success of a space.

With small physical changes designed to increase comfort for its users, the success of an underused space can dramatically turn for the better, as the example of Old Eldon Square clearly shows. Aspects such as the proximity of facilities and buildings capable of generating significant pedestrian flows appear therefore to be of great importance. An overemphasis on particular aspects can, on the other hand, also be a strong predictor of inadequate strategies. The Blue Carpet project shows us the negative consequences of over reliance on specific design features. It was heavily promoted as a piece of public art, raising expectations to a very high level that, in the end, were not met. Once again, budget shortages can have a strong influence in the success of a public space, either by the inability to fully execute the architect's vision or by rising maintenance costs to unsustainable levels, steering the space from what it was intended to be. As degraded spaces will attract higher levels of vandalism and anti-social behaviour, keeping appropriate levels of maintenance is essential. Although this prevents a downward spiral of decline that would require further investment in the long term, further evaluation of investment return is hard to measure.

Still, these interventions are important in order to foster urban improvement strategies. Although there is a reciprocal connection between space improvement, building rehabilitation, and use change, the first one is understood as the most important of the three. Privately owned spaces, although being mainly designed and managed for profit purposes, also share the majority of these premises when successfully filling the gap left by traditional public spaces, creating relevant attraction points, as is seen with Lisboa and Times Squares. Cardosas and Waterloo Squares, on the other hand, are a testament to the dependency of these spaces to the wider real estate and economic market forces that can indefinitely postpone the creation of strong additions to the public urban life. Privately owned spaces come in different shapes and sizes, demystifying the premise that its context is limited to the corporate plazas and gated spaces of the corporate city.

6
RESULTS DISCUSSION

6.1. INTRODUCTION

With all eight case studies thoroughly characterized in both project and operation stages, this chapter is dedicated to the analysis of their publicness performance. As expected, the discussion of the results will start by each of the four major publicness dimensions, followed by an overall publicness performance comparison. The preferences of different stakeholders will also be considered with the use of a weighting system. Use patterns will be the target of an additional assessment, in order to evaluate the influence of aspects such as urban location, and population density and distribution. This will allow a well-founded answer to the three main research questions of this thesis, setting the framework for its last chapter, where the main conclusions will be presented.

6.2. PUBLICNESS EVALUATION

6.2.1. URBAN LIFE

Traditional public spaces, due to their intrinsic nature based on values of openness and freedom, are expected to perform better than semi-public spaces, while keeping this consistency from project to operation stages. The analysis of the project stage shows a pattern among semi-public spaces, with a moderate level of use restriction intended for all four case studies (Figure 6.1). Porto's semi-public spaces would rely on the enactment of an operation schedule, whereas in Newcastle physical access to the space would be allowed at all times. The result, on the other hand, shows that these differences became less noticeable. At the Blue Carpet, use restrictions are currently in place in order to minimize further damage to the pavement, therefore reducing its overall performance. On the other hand, Porto's semi-public spaces lack any signage indicating use restriction. Although in Lisboa Square, staffed security may exert that sort of control, in Cardosas Square the lack of any form of surveillance can lead anyone to think that no use restrictions apply. This will influence user's perception, as will be seen further ahead. The influence of the assessment calendar to Lisboa Square's score, where the rooftop garden was permanently closed to the public, was noticeable, although the predicted scenario will make its performance similar to that of Cardosas square.

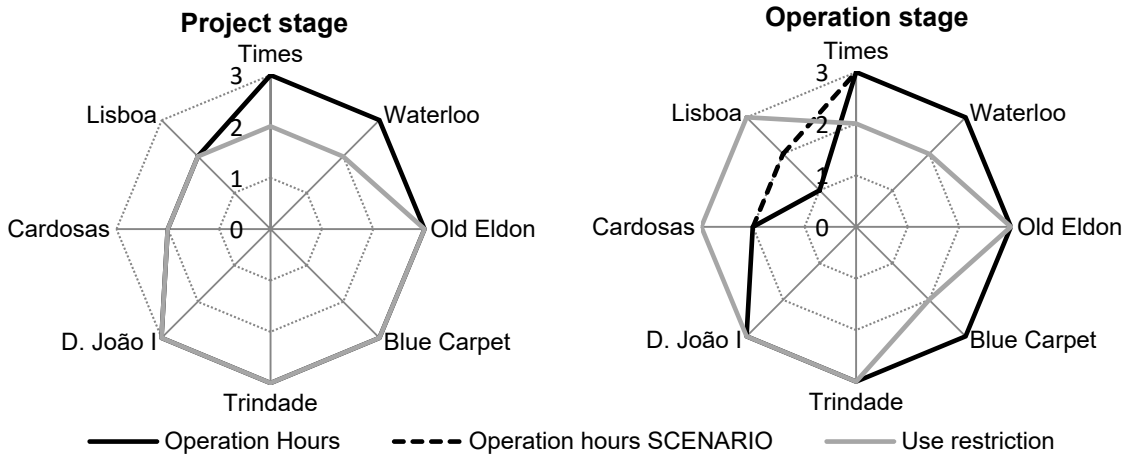


Figure 6.1 – Graphic representation of indicators 'operation hours' and 'use restriction'

From the analysis of these case studies, it was not possible to discover any association between the establishment of use restrictions and the creation of a lively space. Times and Old Eldon Squares, despite being different in terms of ownership, major design features and use restriction indication, are the two spaces with the strongest use variety. Other factors must then have a valid influence on the space's spatial distribution of users. Old Eldon Square results shows what can be called a 'positive feedback loop', as by being a heavily used space it attracts a wide variety of users, allowing for a more homogeneous distribution across the space. Still, this cannot be considered a general tendency, being Trindade station Square one of the exceptions to this rule. Here, and while the Metro system attracts a large variety of users, the lack of comfort conditions keeps them within a small section of the overall square space. The same happens across the rooftop garden area, although in this section physical isolation issues also come to consideration. In Porto, although semi-public spaces were designed in order to operate within certain boundaries of possible uses, the relative freedom that is experienced today does not have a strong influence on the space's usage patterns. Lisboa Square, with the expected opening of its rooftop garden, is bound to increase its overall spatial homogeneity, approaching its performance to the majority of the assessed spaces (Figure 6.2).

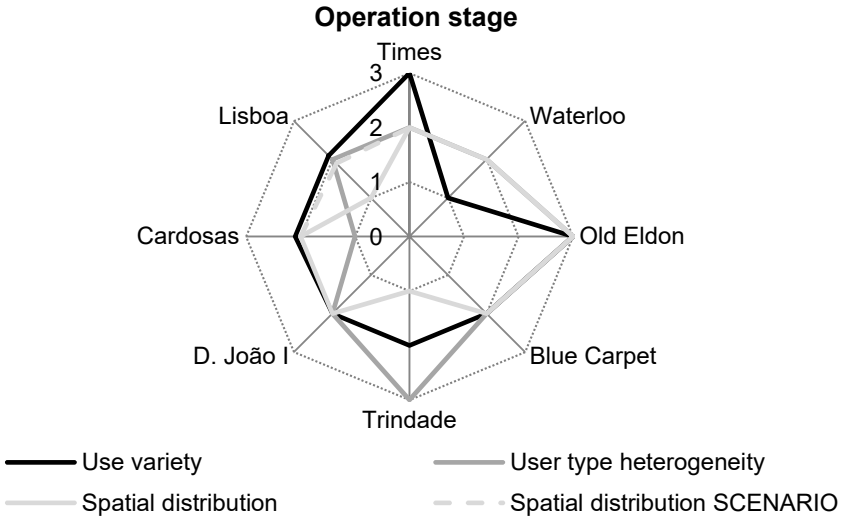


Figure 6.2 – Graphic representation of indicators 'use variety', 'user type heterogeneity' and 'spatial distribution'

Both public and private authorities tend to be overly optimistic regarding the space's projected activity levels and pedestrian flows (Figure 6.3). Only in Old Eldon Square it is possible to identify what is considered a high volume of pedestrian traffic over its peak usage hours, i.e. over 60 pedestrians per minute. Other spaces, such as Times, Trindade and D. João I Squares fall short of the maximum value. The most clear example of this lack of 'prediction power' comes through Waterloo Square, where intentions to create a space that would capture the paths of high volumes of pedestrians resulted in a space with one of the lowest performing scores regarding pedestrian traffic intensity. The weak integration with the adjacent pedestrian network is most likely the main reason explaining Cardosas and Waterloo Squares reduced traffic flows. Although there is a propensity for publicly owned spaces to have stronger pedestrian footfall than semi-public ones, the combination with a key location in the overall surrounding area has an even stronger effect in its activity level, most likely even higher than its physical features, control schemes, or ownership.

User propensity to stay in a space can also depend on a large number of factors. Spaces that congregate a large variety of users in a relatively homogeneous scheme are prone to be considered as better spaces, and therefore present more suitable conditions for the fixation of users for longer periods, being Old Eldon Square one of these cases. The presence of street cafés is also important in the attraction of users for longer periods. Lisboa Square, by concentrating in its café area the majority of its users is the sole reason that explains its performance to be similar as heavily used public spaces, such as Old Eldon Square. On the other hand, the lack of 'things to do' in Waterloo Squares induces users to stay as little as possible.

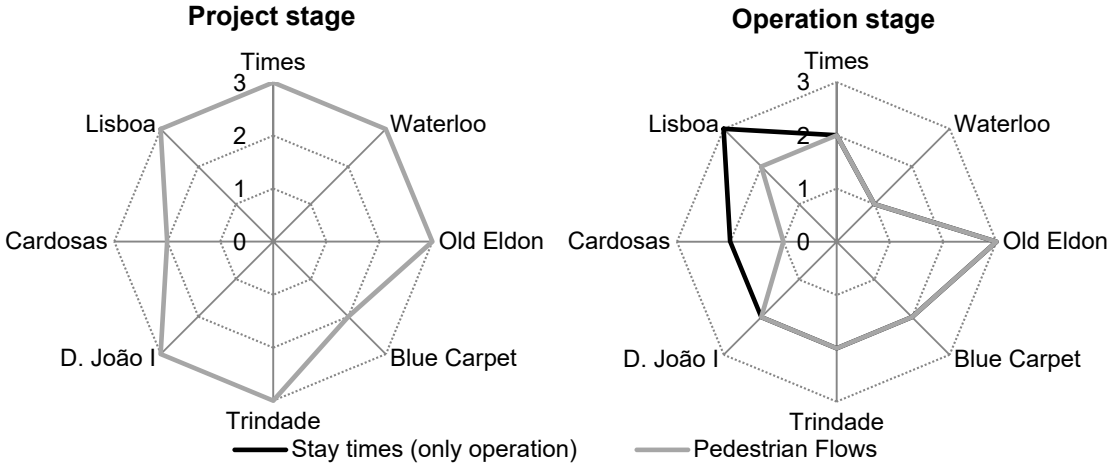


Figure 6.3 – Graphic representation of indicators 'stay times' and 'pedestrian flows'

Spaces designed to be the focus of public events, as is the case with the Blue Carpet, Trindade, and D. João I Squares, all traditional public spaces, saw different fates. While Porto's council currently invests a great deal of attention in the promotion of D. João I as a focus for public events, Trindade station Square stands in a mid-point level, and Newcastle's council fails at adopting a similar strategy for the Blue Carpet (Figure 6.3). Although it appears that Porto's authorities are keener to the promotion of frequent public events in their spaces, the promotion of these actions does not appear to be relevant to the establishment of high activity levels. While it might be important to attract visitors in a temporary basis, it will not contribute to the achievement of a successful space, if the user's basic needs are not met, which is clearly visible in D. João I Square. Once again, the case of Old Eldon Square justifies this premise.

Adequate public transport and parking provision appear to be a common denominator among all analysed spaces, with all spaces achieving maximum scores both at design and operation stages. On the other hand, the treatment given to blank frontages varies greatly among the assessed case studies. Let it be for specific design features, as is the case with Trindade and Cardosas Square, or simply an inability to intervene at this level, as with the Blue Carpet, no clear pattern, either in ownership or geographic location was here identified. The analysis of the operation stage, however, demonstrates that any intervention in the surrounding buildings can face unpredicted setbacks. Privately owned spaces are expected to treat this issue accordingly, as usually public space creation is associated with the development of surrounding buildings under the arms of the same entity. When considering the future scenarios for Lisboa and Cardosas this premise turns out to be true. However, and for the time being, the performance of these two spaces is capped by a temporary inability to attract tenants to the adjacent ground floor retail spaces. Publicly owned spaces, on the other hand, fail to fully eliminate this 'threat' to the full vitality level. Nevertheless, these results do not show that a space's visual and functional connection to its adjacent buildings is quintessential to the establishment of high activity levels.

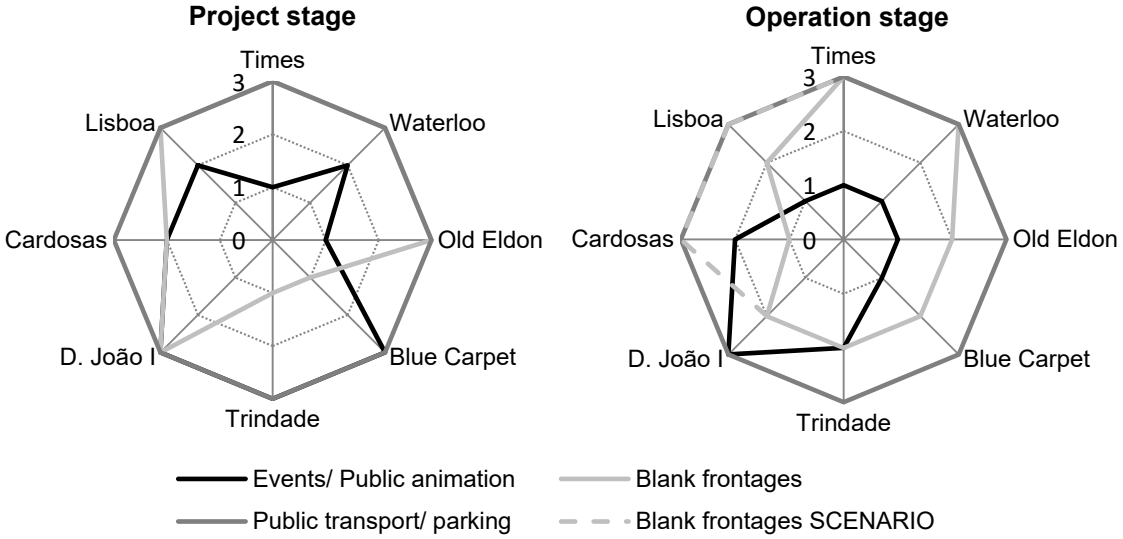


Figure 6.4 – Graphic representation of indicators 'events/public animation', 'blank frontages', and 'public transport/parking'

All spaces experienced a decrease in this publicness dimension, from project to operation stages, slightly more accentuated in semi-public spaces. As expected, traditional public spaces classify, on average, higher than semi-public spaces, mainly due to the absence of use restrictions and more frequent public events. Although this might not have a strong influence of the space's activity levels, it might represent an opportunity for improvement for other spaces towards the establishment of a livelier space. From this analysis, the following findings can be determined:

- Newcastle spaces, regardless of ownership, are designed to operate without any access restriction;
- In Porto, semi-public spaces rely on operation schedules, and although designed to operate within certain boundaries of use possibility, its users face no apparent restriction;
- Both public and private authorities tend to be very optimistic regarding projected activity levels for its space, although real use patterns tend to fluctuate in a great extent;
- If a space has a high spatial homogeneity, it will most likely have a high variety of uses and users. They wouldn't most likely be able to 'coexist' in a small area;

- Frequent public events do not necessarily mean higher activity levels, as it does not mean the satisfaction of user's basic needs;
- Users of livelier spaces have longer stays and street cafés also contribute to that.
- Private authorities are more prone to treat blank frontages accordingly, as these spaces are often developed in conjunction with its adjacent buildings;
- This means that design features are most likely very relevant to the establishment of a lively space.

6.2.2. Physical Design

The analysis of the first set of indicators of the physical design dimension demonstrate simultaneously some general patterns, but also some particularities resulting from the selection of case studies (Figure 6.5). Physical access restrictions, adopted to enforce operation schedules are in place in Porto's semi-public spaces, both in project and operation stages. Trindade metro station, although being a publicly owned space, has the particularity of doubling one of the rooftop garden entrances to one of the station entrances, being therefore gated in order to articulate with the metro system operation hours. By clearly being an exception to the general rule, it is acceptable to say that physical access restrictions are left apart of all spaces that provide access without any temporal restriction. This was, nonetheless, expected, as the adoption of physical access restriction measures are indeed the most effective way of enforcing these timely access restrictions. On its absence, other costly methods, involving security personnel and/or electronic surveillance schemes would be necessary.

Inclusive design features, although often viewed as essential, rely on the space's topography and design choices to conquer these level differences. Some spaces, such as Cardosas, Lisboa and Times Square, although presenting alternatives to conquer the height differences tend to execute them with poor visibility schemes and often forcing users to take large detours. Fortunately, no changes were identified between project and operation stages, showing an effort by space designers and managers in order to avoid any last-minute changes that could disturb its accessibility features. The existence of restrictions through design, often associated with corporate plazas and other semi-public spaces where intentions to restrict behaviour are stronger, is here visible only in a public space, in this case Old Eldon Square. This, once again, represents an unexpected consequence of the selection of case studies. Most spaces present a proper adequacy of hard surfaces to the existing pedestrian flows, although this is a result of the lack of grassed surfaces in the majority of assessed spaces. Old Eldon Square is a victim of its own success, as even though the most recent physical redesign tried to address wear on the edge of the four main grass patches, these same signs are still clearly visible. This might, then, point to the fact that the prediction of user's preferences and choices is bound with uncertainty.

Through the analysis of these case studies, there appears to be no direct correlation between the adoption of physical access restrictions and other design-led restrictions, namely through the form of restrictive urban furniture.

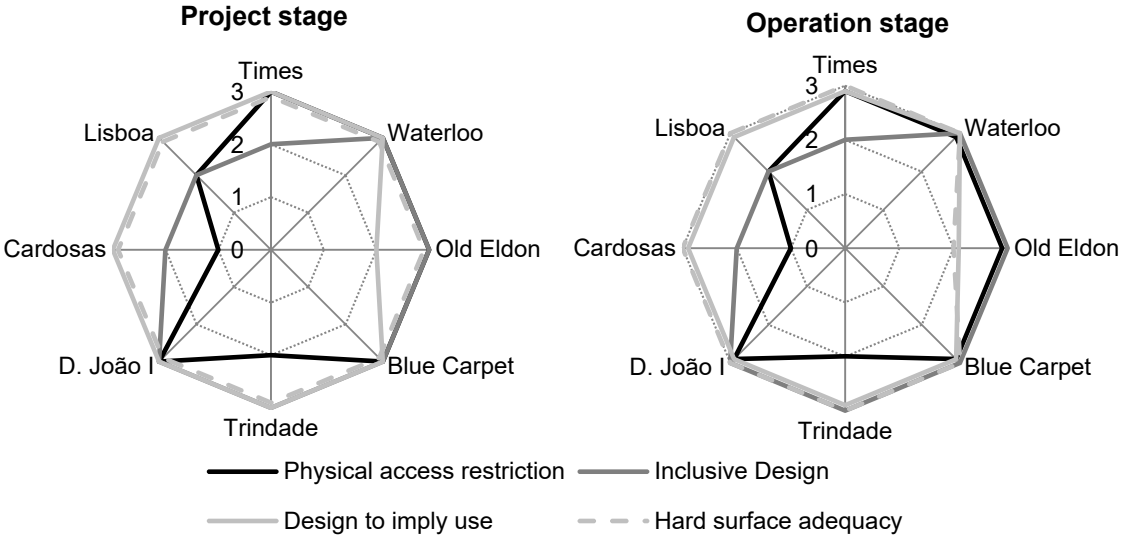


Figure 6.5 – Graphic representation of indicators ' physical access restriction', 'design to imply use', 'inclusive design' and 'hard surface adequacy'

Visual quality is commonly influenced by a high number of factors. Due to their greater exchange value, privately owned spaces are expected to have higher maintenance standards, and therefore an overall better level of physical upkeep. Although this is mostly true when analysing the project stage, the operation stage has shown weakness at some semi-public spaces, usually due to insufficient coordination efforts or financial ability of its management entity (Figure 6.6). The selection of materials, although often intended to coordinate visual condition with maintenance costs saw different fates. Waterloo and Cardosas square, although designed with quality materials, which would provide easy maintenance, are characterized by several signs of degradation, whether by a lack of maintenance or by an inability to intervene in all of the adjacent buildings. On the other hand, D. João I Square and the Blue Carpet are victims of the public authorities' inability to maintain them at optimum conditions, as the number of public spaces under their umbrella is often higher than they could ideally handle.

Visual richness, on the other hand, although addressed thoroughly at the design stage of the majority of spaces, suffered changes at the expense of design modifications and natural material wear. Trindade is the only space that did not value its visual richness from the start, due to the chosen architectural language. Visual connection to the surrounding areas and on-site legibility remained unchanged, with public spaces performing slightly better, due to their generally broader physical openness. This analysis works to deconstruct the myth that privately owned spaces are always in better physical condition than its publicly owned counterparts.

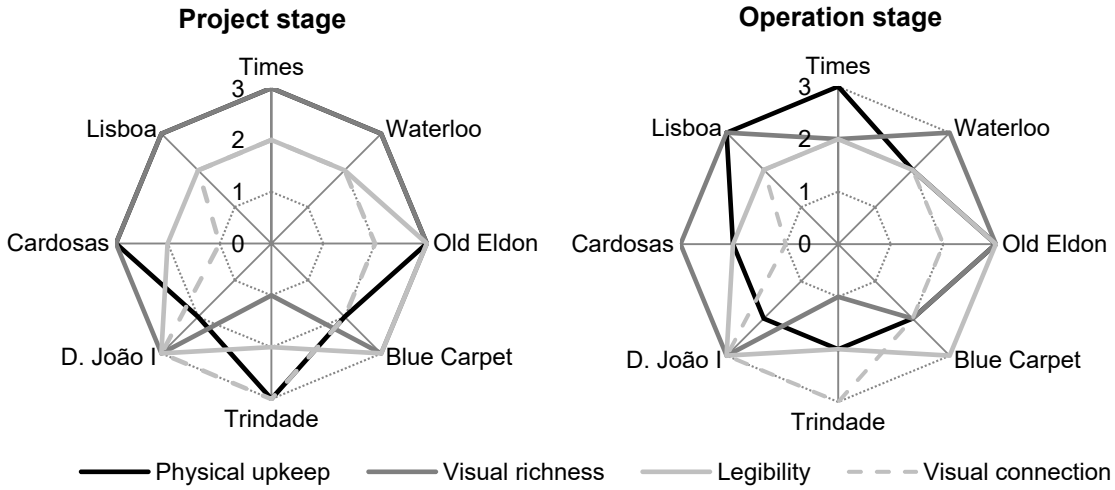


Figure 6.6 – Graphic representation of indicators 'physical upkeep', 'visual richness', 'legibility', and 'visual connection'

The concern regarding seating is characterized by distinct approaches (Figure 6.7). While in Newcastle this feature is often regarded as important and addressed accordingly, particularly in publicly owned spaces, in Porto this feature was only addressed with greater importance in semi-public spaces. Seating comfort features ranged across the different spaces, with no clearly visible pattern. Some spaces such as Old Eldon and Times Squares, although designed to provide enough seating opportunities, experience heavy usage at peak hours, leaving users to seek alternative, and often improvised, seating locations, causing a performance decrease. The simple non-inclusion of seating locations, deviating from the original brief, as is the case with Lisboa Square, is also one of the reasons for a performance decrease at this level. Cardosas square, on the other hand, suffered a performance increase as its current reduced usage turns the few formal seating opportunities adequate in number. Nevertheless, when seating provision followed the original plans, so did its comfort and flexibility features. It is also important to note that Porto's spaces present a stronger dependency on the use of street cafés for the provision of seating, although these cannot be considered as traditional formal seating locations, as they are associated with consumption amenities.

The provision of interactive elements, although featuring with a considerable strength in some projects such as Old Eldon, Cardosas, D. João I, and the Blue Carpet, saw different results. While the first two were able to keep the existing intentions, the remaining suffered from budgetary issues that led to its non-inclusion, therefore reducing its publicness score. Cardosas square performance, still, is expected to match the one of the project stage, as not all interactive elements were operating at the time of the assessment, despite being installed. Other spaces, such as Times and Waterloo Squares experienced a performance increase, either due to later inclusions or to user appropriation of design features not aimed to interactivity.

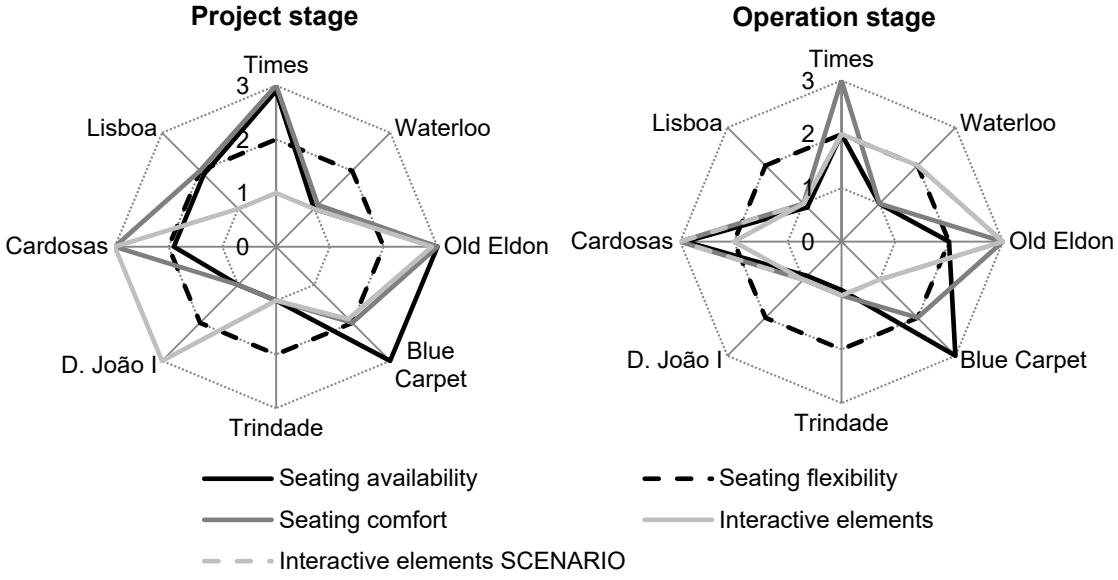


Figure 6.7 – Graphic representation of indicators 'seating availability', 'seating flexibility', 'seating comfort' and 'interactive elements'

It is often common for the provision of climatic comfort not being on top of public space designers' priorities, and in some situations even regarded as irrelevant, such as in Waterloo Square (Figure 6.8). However, most spaces achieve relatively good performances as certain design features often worked towards the achievement of climatic comfort conditions. Green elements, particularly large trees, placed to improve a space's visual quality, have a significant role as shading elements, very important in hot summer days. Water features can also be useful in softening the effects of extreme temperatures, although in windy conditions they can become a nuisance for passers-by. Still, due to the costs associated with its maintenance, the majority of space managers and public authorities often decide against its inclusion. Also, features of adjacent buildings can contribute towards a performance increase, as in D. João I arcades of surrounding buildings.

All spaces provided some sort of green elements, either through the provision of grassed areas, trees, or both. Cardosas square will be the only providing both water features and green elements, once its fountain on the northern edge eventually becomes operational. Although there is not a clear pattern, designers of Porto's public spaces often have a stronger sensibility to the achievement of proper climatic comfort conditions than its Newcastle counterparts, and are often keen in resorting to shaded areas and water features for that matter. Still, this might be explained by the geographic and inherent climatic context of the urban areas, as is common for temperatures in summer months rising over 30 degrees.

Safety is often an important element in the design of a public space, with issues of lighting and openness being deemed as key prerequisites. Although there is a widespread intention to provide proper illumination conditions to each site, the reality falls into more unpredictable scenarios. Dark corners can appear as a consequence of budgetary cuts, leading to changes in the proposed lighting schemes, as is the case with the Blue Carpet, vandalism as in Trindade, or simply a lack of knowledge in the location and selection of light spots, as in Cardosas. These are some of the visible examples on how this indicator can fall short of the initial expectations. Despite the fact that the physical delimitation of spaces through fencing or similar schemes is not a common strategy, as the majority of spaces achieve maximum score, the physical enclosure of Porto's semi-public spaces required to satisfy the needs of its owners ended

up contributing negatively to their performance. Even if intended to guarantee the physical integrity of the space at night times, its negative outcomes in safety perceptions are known for a long time.

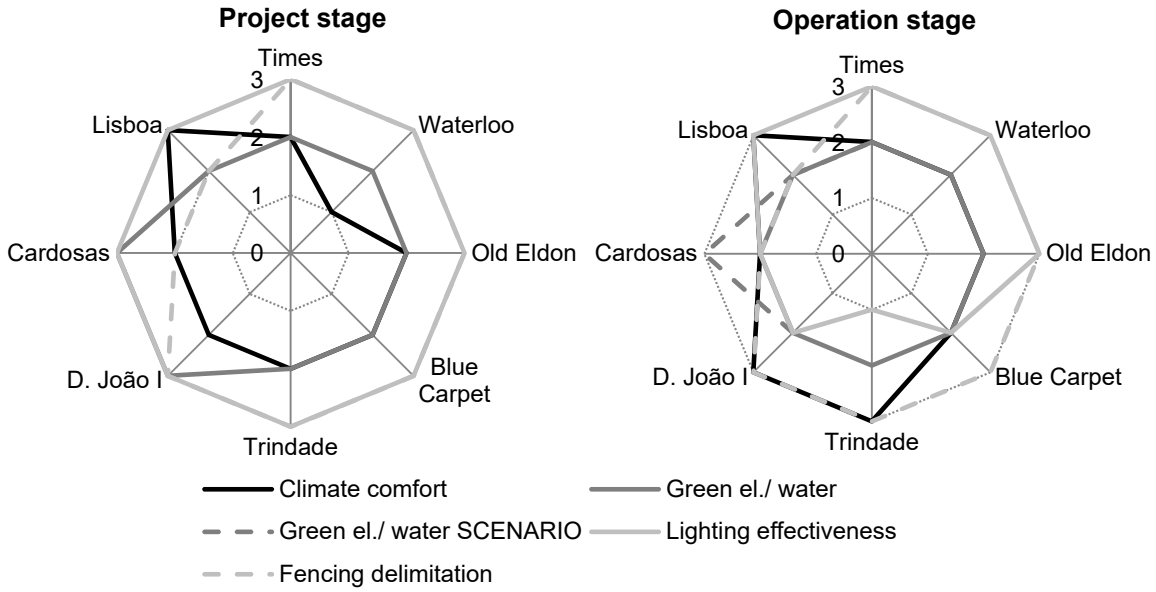


Figure 6.8 – Graphic representation of indicators 'climate comfort', 'green elements/water', 'lighting effectiveness' and 'fencing delimitation'

In what concerns the presence of additional urban furniture, the provision of trash receptacles, important to avoid the accumulation of debris and therefore reducing the space's visual appeal, was considered in all projects, although with some deficiencies at Lisboa and Trindade squares (Figure 6.9). Unfortunately, spaces such as Lisboa, Cardosas, and D. João I Square lack some of the urban furniture initially proposed, either by choices by the designers, space owners, or simple due to their removal as a consequence of vandalism acts. As a result, the gap between these two distinct spatial contexts widens, as the comparison point shifts from project to operation stage. Porto spaces present a greater level of consideration for the provision of additional amenities, although this can be explained by their inclusion in more complex projects, such as underground parking garages and metro stations, where elements such as public toilets would be available. NE1, beyond the provision of additional support for everyday tasks such as maintenance and cleaning, also have a relevant role in this performance indicator, through the 'Use our loos' initiative, providing to the general public the use of toilets inside nearby facilities, such as museums or shopping centres, justifying the performance increase in Old Eldon Square and the Blue Carpet.

In Newcastle, all spaces are designed under the same premises when dealing with the possibility of receiving vehicular traffic, by allowing occasional access for maintenance, loading and unloading of cargo. In Porto, only D. João I Square was designed under the same principles, as the remaining three spaces were designed to avoid any vehicular presence. Today, traffic isolation does not work effectively at D. João I and Old Eldon Squares, as parked delivery vehicles and even private vehicles in the first case, are common presence. A performance reduction is also visible in Trindade station Square, as maintenance vehicles and even police vehicles can occasionally be found in its central section. Bicycle parking was fully addressed in all of Newcastle's spaces and in Trindade station Square. All the remaining spaces ignored this possibility from the ground up, and no changes were made since.

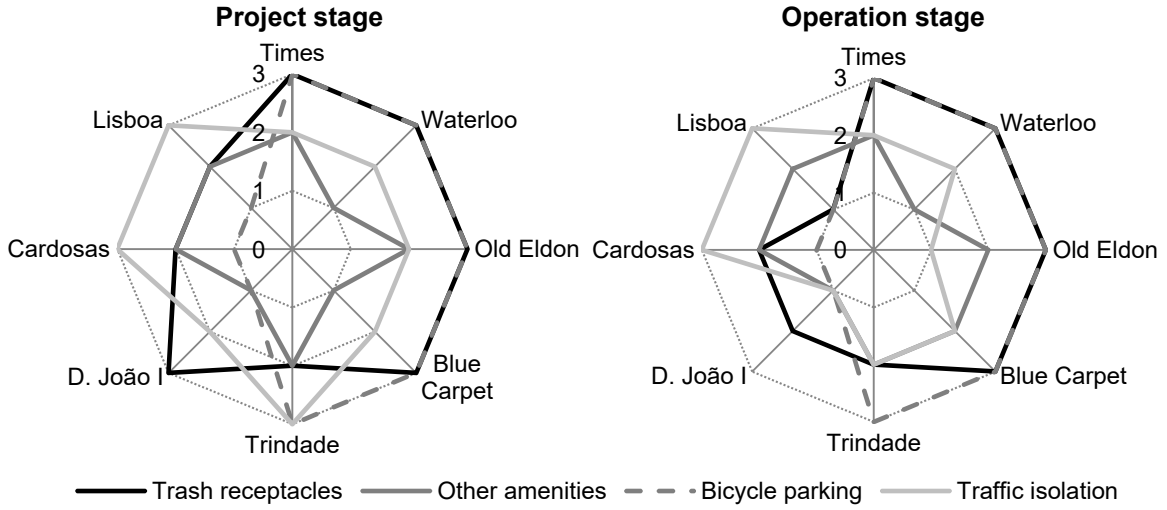


Figure 6.9 – Graphic representation of indicators 'trash receptacles', 'other amenities', 'bicycle parking' and 'traffic isolation'

On average, Newcastle spaces are characterized by higher scores in this publicness dimension, both in project and design stages. There is also a tendency for a performance decrease in all spaces, with the exception of Waterloo Square. Here, unexpected increases in the indicators measuring climatic comfort and engagement features over-compensate the reduction in its overall visual quality. While in the project stage, traditional public spaces have a slight edge over privately owned spaces, the move into the operation stage causes a reversal in this tendency. Aspects such as physical upkeep, lighting schemes, and traffic isolation effectiveness tend to be poorly addressed in the operation stage. The following findings can be assumed:

- Inclusive design features are viewed as important in the design stage, regardless of the space's ownership or geographic context. The space's topography and design choices are important to the definition of its applicability;
- Restrictions through design tend to be rarely included, while can sometimes be the consequence of unfortunate design features;
- The prediction of user preferences in the selection of possible pedestrian paths is characterized by a certain level of uncertainty;
- Semi-public spaces, due to their physical enclosure, underperform in aspects such as legibility and visual connection;
- Privately owned spaces, although addressing future physical upkeep with greater concern, do not necessarily reflect these efforts during its regular operation;
- In Newcastle, formal seating appears with a stronger presence in traditional public spaces, whereas in Porto there is a heavier reliance on street cafés to provide for it. Nevertheless, when seating is properly addressed, so are its comfort features and location;
- Interactive elements often lack due to budgetary issues;
- The provision of climatic comfort conditions is often not on the top of designers' priorities. Still, certain design features, particularly the use of large trees, end up contributing positively;
- Although lighting is an important concern towards the achievement of proper safety conditions, most spaces today are characterized by important gaps at this level;

- Newcastle Business Improvement district NE1 plays an important part in the provision of additional amenities to Newcastle's spaces, once again justifying the importance of these authorities to a better operation of city centres;
- Bicycle parking is strongly addressed in Newcastle, while in Porto it is still not viewed as an important asset.

6.2.3. HUMAN CONNECTION

Although upon the full completion of the projects of Cardosas and Lisboa Squares, these spaces would most likely work better in fulfilling the needs of its users, it would be imprudent to embark on the guessing of its user's opinions. As a result, in the analysis of the human dimension of publicness no additional scenarios were included in its evaluation.

Traditional public spaces are favoured in the project stage, as their public nature induces a higher publicness score (Figure 6.10). However, when moving to the operation stage and the user's judgements are factored into the analysis, the scenario changes. Across all spaces, either public or semi-public, the majority of users classify them as public. The existence of physical access restrictions or a stricter security presence, as is the case with Cardosas and Lisboa Squares, appear to be the only relevant factors affecting users' judgements. Even the fact that privately owned spaces in Newcastle coexisted with its public counterparts for longer than in Porto seems to have no influence in the user's opinion. This might point to the fact that, in the absence of clear signage announcing the presence of a privately owned public space, and keeping an overall open access scheme, most users will fail to notice the difference between a public and a privately owned space.

All publicly owned spaces are good performers in what concerns the assessment of its users' freedom feeling, while privately owned ones can show a larger variation. The surrounding residential and office function is responsible in Cardosas and Times Square for a moderate concern regarding possible restrictions in its users' freedom, as the feeling of 'being watched' would always factor in their conscience. While this situation could be also visible in spaces such as D. João I and the Blue Carpet, their higher visual openness can positively influence user perceptions into associating these locations as traditional public spaces, and where use freedom is a given fact. Although in Waterloo Square this was also verified in the user surveys, it did not influence users as strongly as in the other case studies. Still, the adoption of staffed security is the most effective measure for inducing a control feeling, as is visible from the reduced freedom feeling experienced by Lisboa Square users.

By being located in central areas, with a reduced expression of residential functions in the overall built area, all case studies have a considerable amount of non-frequent users. Trindade station Square appears to gather the preference of a higher percentage of daily users, although its adjacency to the metro station turns it into an obligatory passage for the thousands of nearby workers. Other spaces might see its reduced amount of frequent visitors explained by the large presence of tourists or occasional visitors to the city centre, as is clearly the case with Lisboa, Times and Old Eldon Squares. Even spaces with a strong component of office use in its direct adjacency, namely Times and D. João I Squares, fail to attract these nearby potential uses. This might then indicate that the proximity of tertiary uses is not enough to embed a space with a high percentage of daily users.

Opinions regarding use adequacy fluctuate greatly among the assessed case studies. Old Eldon Square's high volume of users pays off in this evaluation, as the majority of the surveyed users consider the space to be properly used. Lisboa Square, even though at the time of the assessment was used mainly as a passage site, was reasonably well classified regarding use adequacy. For the relative high rate of

occupancy of its street cafés and active storefronts, users consider that Lisboa Square responds well to its intended purpose. D. João I and Waterloo Squares are on the opposite end of the scale. While in the first case most of its users consider that the space has the potential to host a larger variety of uses, due to its open central section, Waterloo Square's users consider the space to be more underused than effectively wrongly used, meaning that its lack of success cannot be justified by its physical setting impeding certain user groups or activities. Times, D. João I, Cardosas and Trindade metro station squares are the ones mostly criticized for the lack of usage. Coincidentally, these spaces are characterized by open central sections, where usage is fairly reduced. This might then indicate that this type of configuration is not widely welcomed by public space users. Apart from the obvious differences in user classification, the main factor differentiating public and semi-public spaces is user freedom feeling.

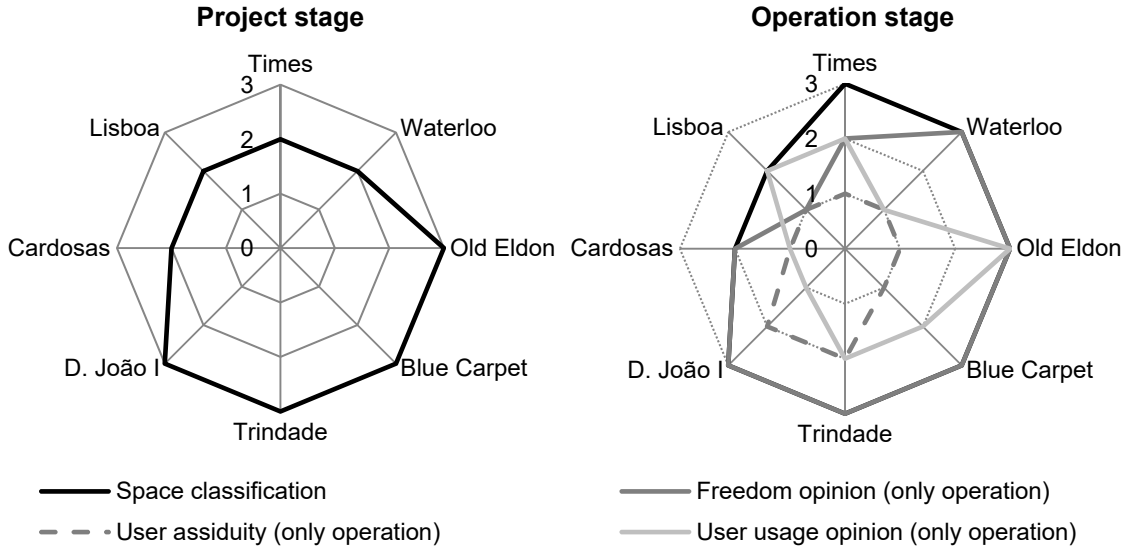


Figure 6.10 – Graphic representation of indicators 'space classification', 'freedom approach/ opinion', 'user assiduity', and 'user usage opinion'

By being decisive in the selection of certain physical features, such as in Old Eldon, D. João I, Cardosas, and Lisboa Squares, or by being a consequence of certain features, as in the remaining case studies, safety considerations were always a presence in these projects. However, when analysing the user feedback, the particularities of each site play an important role (Figure 6.11). Although safety opinions can shift to some degree, most spaces achieved maximum score in what concerns this indicator, with special regard to Lisboa and Waterloo Squares, due to the presence of staffed security in the first case, and the adjacent residential function in the second. On the other hand, Trindade square and the Blue Carpet present room to improve.

Although not visible through this graphical representation, night time safety is a common concern within public space users, slightly more expressive in Porto than in Newcastle. Safety perception appears then to be more a result of the space's adjacent physical setting, rather than ownership, surveillance schemes, or use intensity. These safety concerns are not expressed into the dynamic dimension of publicness, meaning that high usage levels do not necessarily increase user safety perception, especially at evening hours, where usage will invariably be less intense. As anticipated, safety concerns are closely related to the effectiveness of a space's lighting scheme.

Though comfort was considered an essential feature in all spaces but D. João I, Trindade, and Waterloo Squares, users appear to have a different say in the subject. The lack of places to sit is commonly identified as a pertinent flaw, particularly in Trindade, D. João I, and Lisboa Squares. As expected, Old Eldon Square is the only space with an overall positive feedback regarding comfort levels, and where the criticism regarding lack of seating possibilities is virtually inexistent. It is then safe to assume that seating provision is an important feature for the success of a public space, at least in what concerns the satisfaction of one of public space users' main needs. Porto's public space users are often keen to identify other reasons for the lack of comfort experienced, mostly falling into poor climatic comfort features. The presence of the 'wrong type of users', which could be an issue in spaces such as Old Eldon Square and Trindade stations where significant youth gatherings happen frequently, was only mildly mentioned in the first case. As the result, the gathering of large youth groups in public spaces is not a factor posing significant threats to its regular operation.

Most spaces received good scores from its users regarding its upkeep condition. Although the creation of a quality site was viewed as a major goal in spaces such as D. João I and the Blue Carpet, their scores are less than ideal due to the noticeable physical degradation. Surprising is the result of Waterloo Square, that even with the occasional litter and some physical degradation appears to be well classified by its users. The fact that the majority uses Waterloo Square mainly as a passage site, and therefore take little time to notice the space details, can be a plausible justification for this fact. On the other hand, Trindade station also received an average score, even though the main visible signs of degradation can only be found on its upper level, which receives little to no use. The space visual austerity in aspects such as lines, textures, colours and the minimum presence of urban furniture might then mislead users into thinking that this space once had greater variety at this level, or simply that they do not value this architectural language.

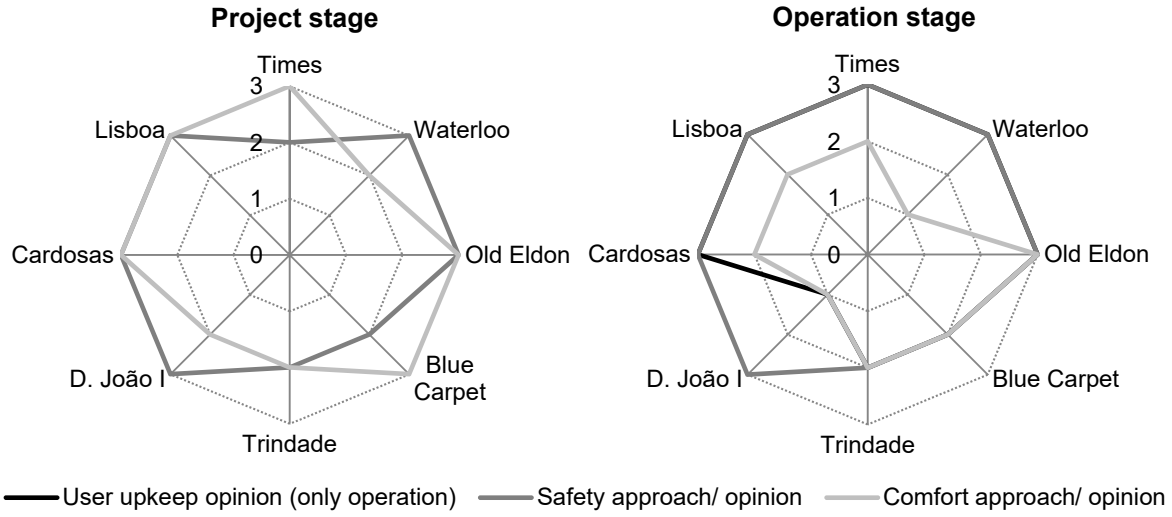


Figure 6.11 – Graphic representation of indicators 'user upkeep opinion', 'safety approach/ opinion', and 'comfort approach/opinion'

Whereas the Blue Carpet, D. João I, and Cardosas squares were designed to actively provide for user interaction and experience, the majority of assessed spaces fail to provide it to its users (Figure 6.12). Only Cardosas and Lisboa Squares generated relevant feelings of surprise to its users, although this could be likely explained by the novelty effect of these spaces, as other spaces such as Times Square and the Blue Carpet fail today to achieve the same effect. While it is visible, from the designer and client

sides, a concern for the symbolic importance of the space, or at least its potential for it, the transposition to the user perspective tells a different story. In fact, the majority of the users pointed little value to each of the public spaces where the different surveys took place. The fact that the two main public spaces of Porto and Newcastle, namely Aliados Avenue and Monument square, were absent from this study can partially explain this.

All spaces achieved the same score when analysing its users' involvement intention. A general absence of concern for public issues can also be one of the explanations for the general lack of interest in being more involved in the operation and management of public spaces, as positive answers in all spaces fell within the 30-70% interval. Looking at the small print, this effect is more noticeable in Newcastle than in Porto, as the recent increase in public usage in the latter has been successful in reinforcing the city's resident's connection with its public spaces. To compensate for the lower level of public interest in its management, semi-public space users often have a more representative interest to be more involved in other spaces, most likely to be traditional public spaces. When adding the sum of all public spaces, both the ones assessed and others with greater potential for use, the two cities are in similar positions regarding user involvement intention.

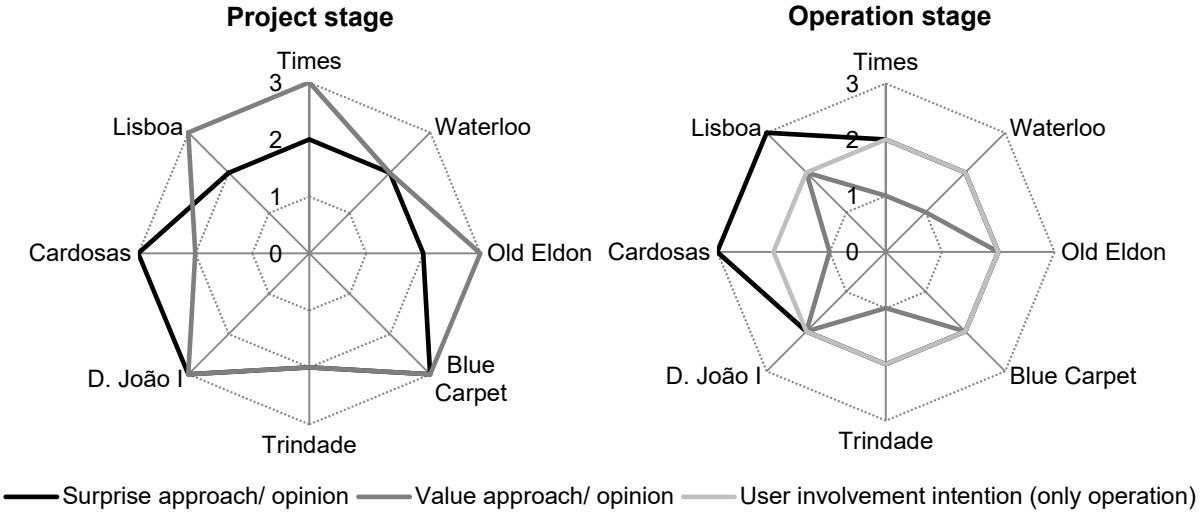


Figure 6.12 – Graphic representation of indicators 'surprise approach/ opinion', 'value approach/ opinion', and 'user involvement intention'

Overall, there is a widespread reduction in this dimension's performance, meaning that management authorities, either public or private, are incapable of correctly addressing users' needs. The main findings of the analysis of this section are the ones that follow:

- The majority of users tends to classify spaces as public, when physical access restrictions or the presence of staffed security are not in place;
- User freedom feeling is a factor differentiating public from semi-public spaces;
- Adjacency of office and residential functions appears to be strong in restricting users' freedom feeling, which can also be affected in situations of reduced visual openness. In the same perspective, these uses can increase user safety perception;
- Spaces located in central areas will often have a high percentage of occasional users, due to the number of tourists and visitors from other areas of the city;
- The proximity of tertiary uses is not enough to embed a space with a strong number of frequent users;
- Users criticize spaces with open central sections, lamenting its lack of usage;

- User safety perception does not necessarily become stronger by high usage levels, but can benefit from proper lighting schemes. Night-time safety is therefore a common concern;
- The lack of formal seating opportunities is seen as critical to a space's lack of perceived comfort;
- The gathering of large youth groups appears to be irrelevant to users' perceived comfort and safety levels;
- A space's novelty factor is important in generating relevant feelings of surprise;
- A general absence of concern for public issues can be the reason explaining the lack of interest in involvement both in public and semi-public spaces.

6.2.4. MANAGEMENT

Contrary to the usual assumptions stating that a public space relies fully on natural surveillance while a semi-public space is aided by additional surveillance methods, such as CCTV or private security, the nature of the assessed case studies tells a different story (Figure 6.13). Project-wise there are a number of combinations between ownership and surveillance schemes, but when moving to the current reality of the different assessed case studies, the range of solutions is less diverse. Newcastle's public spaces, either public or not, always rely on CCTV to ensure public safety, as is common practice throughout the UK. This is the reason behind performance decreases in the Blue Carpet and Waterloo Squares, as CCTV was not considered initially. In Porto, CCTV can only be found in D. João I Square. Staffed security, often intended for semi-public spaces, is also visible in Trindade Metro Station Square, as the surveillance of the station building naturally extends towards the adjacent square. In Cardosas Square, the absence of the intended security presence is, for the time being, the sole responsible for its performance increase.

If analysed closely, a connection can be found between the surveillance scheme intentions and its implications on the space's access freedom, meaning that a stronger focus on active surveillance methods is often replicated into stronger access control schemes. Still, as the evaluated case studies deviate from the accepted norms, this correlation can probably be just a lucky coincidence. The same can be concluded regarding the indicator measuring the impact of restrictive design features.

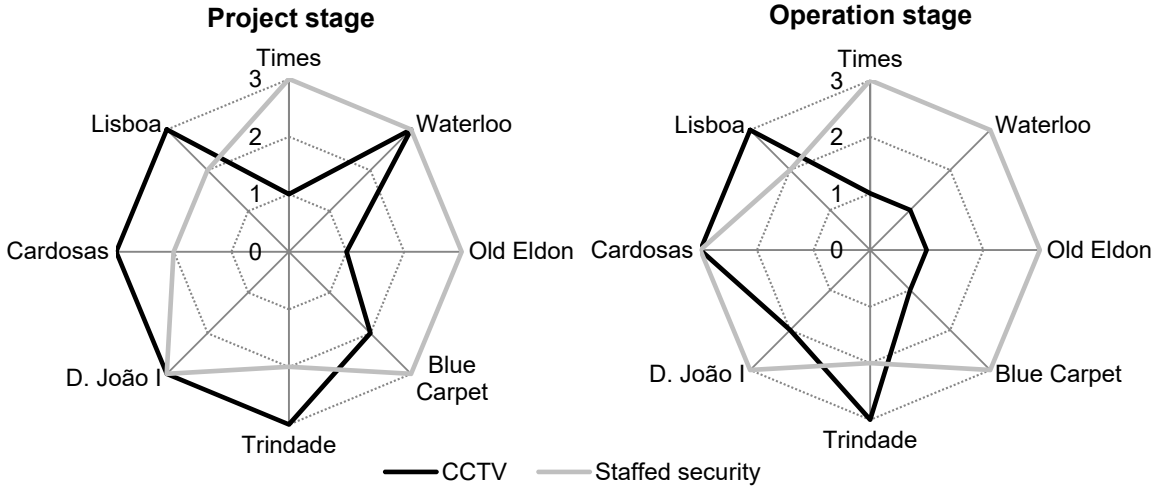


Figure 6.13 – Graphic representation of indicators 'CCTV' and 'Staffed security'

All spaces were designed to cater for public needs in terms of food consumption, either by allocating café space in the public domain, or by providing food-vending facilities, while simultaneously not

addressing an excessive amount of space to it (Figure 6.14). Although some of the spaces did execute that premise fully, others failed to include this element. Trindade station Square and the Blue Carpet are, in fact, the only spaces without any dedicated consumption space. While in the first case it is merely a consequence of the non-completion of the full project and its lack of commercial spaces, in the latter one the closing of the café in the edge of the square meant the removal of its only outdoor consumption space. As the market dictates this feature, a visible improvement can take place in the future, if this retail space is replaced by other of a similar area of business. Even though as D. João I failed to integrate the street cafés in the central section of the square, the existing one in its northwestern edge compensates its absence. Currently, cafés are more than just a place to have a cup of coffee or grab a bit to eat. As Wi-Fi has become ubiquitous, especially in café outlets and a number of public buildings, its integration is often seen as important to increase public appeal. Unfortunately, the majority of the assessed spaces fail to provide it. Although Porto's City Council has been investing in the last few years in a citywide Wi-Fi network, its coverage is still weak in the assessed case studies. Of all the four case studies in this work, access to Porto Digital's Wi-Fi network is only possible in some sections of D. João I Square. Times Square is the only space where wireless internet access is provided, although limited to the eligible members of the 'eduroam' network, i.e. students, researchers and teaching personnel of European higher education facilities.

Each of these eight case studies was developed with varying intentions in mind, ranging from the interventions associated with broader citywide projects, such as Times, D. João I and Trindade squares, to the isolated intervention of the Blue Carpet. However, this feature is not a measure of future articulation with surrounding areas. Privately owned spaces, as expected, tend to be managed in isolation, following the general approach of its management authorities. Although spaces under public management are prone to be managed in network with other public spaces, as the management authority is often the same, the particularities of the assessed case studies changed the expected outcome. While D. João I and Old Eldon Square are in fact managed in conjunction with nearby spaces, Trindade station Square and the Blue Carpet do not follow the same path. In the first case, this situation can be explained by the fact that the space is run by the metro company, which, although being a public company, is not in charge of similar spaces in the vicinity. The case of the Blue Carpet is a consequence of the fragmentation of the organizational structure of Newcastle City Council and the lack of capacity to optimize its public spaces.

The majority of management authorities are open to event partners in order to promote the animation of their spaces, with two exceptions. First, in Waterloo Square, for the lack of interest of the management authority and the possibility of conflicts with the adjacent residential use, and in Old Eldon Square, for the necessity to maintain the space's symbolic value, directing events to more suitable spaces in the vicinity. D. João I Square is the only space where there is a visible attempt to promote frequent public animation events, taking advantage of its open central section. Other spaces with similar design features do not explore it fully, and can therefore take lessons from this space.

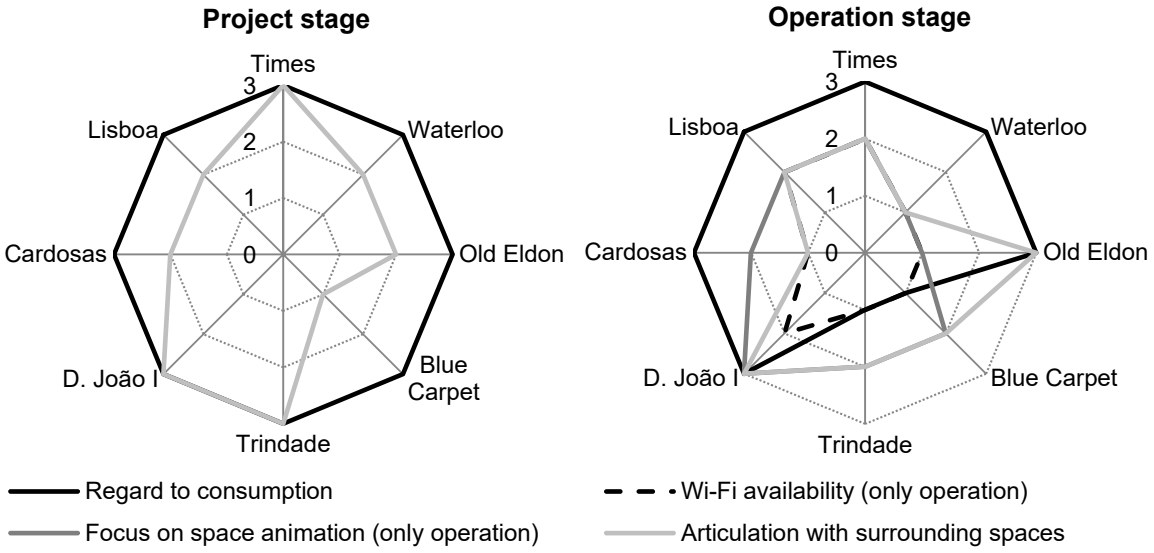


Figure 6.14 – Graphic representation of indicators 'regard to consumption', 'Wi-Fi availability', 'focus on space animation' and 'articulation with surrounding spaces'

Although all spaces presented during the project stage were characterized by a proper level of inner communication (Figure 6.15), Newcastle space owners often present a sturdier management response in project stages in comparison with Porto ones. In Porto's publicly managed spaces, problem solving usually takes the path towards the solving of minor issues. Performance decrease is a common feature in this indicator, with the exception of Times Square, as in the project stage some difficulties put the entire project on risk, whereas currently no major challenges have posed. On the other hand, both in Waterloo Square and the Blue Carpet, communication issues and a passive attitude towards the appearing problems are responsible for the strong decrease. In other cases, such as D. João I and Old Eldon Square, the decrease can be explained by a less active communication between different entities, meaning that issues now can take longer to solve.

Public participation throughout the project stage is more active and influential in the UK's projects, both of public and private nature, while it tends to be completely absent in Portuguese semi-public space projects. This explains the difference between the average scores of Portuguese and British spaces. However, with Trindade and Lisboa Squares as exceptions, the evolution tendency for the indicator 'outer coordination' is often of a generalized decrease, due to the lesser need for communication with outer entities, replicating the evolution of community participation.

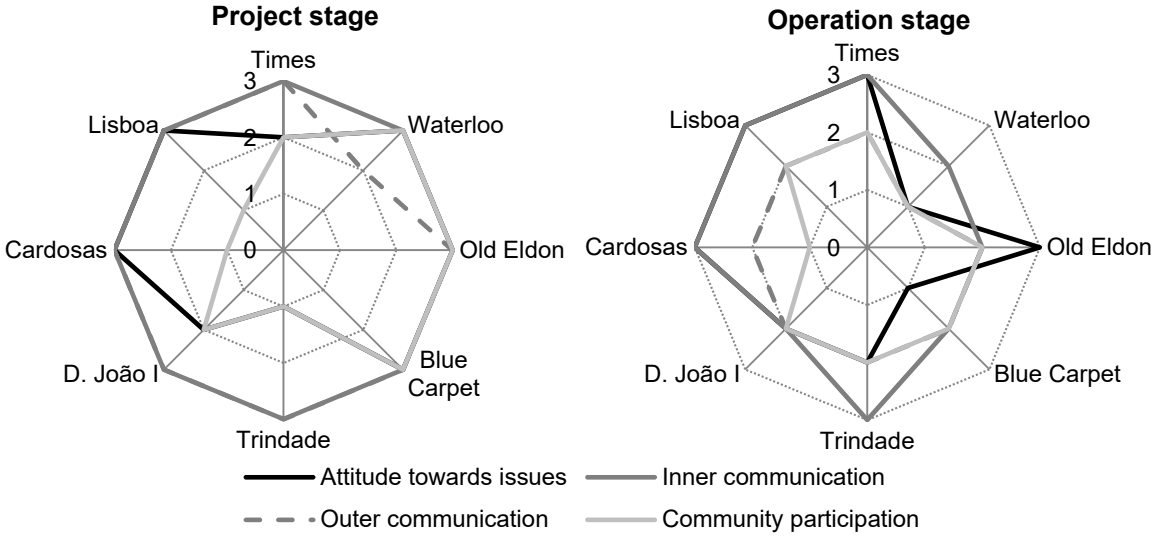


Figure 6.15 – Graphic representation of indicators 'attitude towards issues', 'inner communication', 'outer communication' and 'community participation'

The analysis of the management perspective shows us that, while in the project stage, public authorities often take the lead, the natural evolution is for private authorities to show a greater degree of concern for the space, and taking a strong attitude, achieving a higher partial publicness score. Summing up:

- Public spaces and semi-public spaces do not necessarily follow the soft/hard surveillance schemes duality as is commonly believed;
- Although all spaces were designed to have street cafés, not all spaces currently present this feature, due to functional changes or closing of existing facilities;
- Wi-Fi provision is not as widespread as expected, with particular regard to Newcastle's spaces;
- Despite the fact that some spaces were developed within broader urban interventions, this does not mean that this articulation followed to its operation stage;
- Privately owned spaces tend to be managed in isolation with other similar spaces, although coordination and budgetary difficulties can also affect the performance of its public counterparts;
- There is a valid interest from most management authorities in seeking possible event partners;
- The majority of spaces with open central sections are not explored in regard to the possibility for public events;
- Problems in inner communication and a passive attitude towards any appearing problems are responsible for a space's physical decay;
- Public participation is more active and influential in Newcastle's projects.

6.2.5. OVERALL PUBLICNESS VARIATION

Across all spaces there is a tendency for a higher publicness score at the project stage. There is not a tendency identifying higher or lower decreases in publicness scores between spaces in different geographic contexts or ownership schemes.

Waterloo Square, D. João I Square, and the Blue Carpet, followed closely by Lisboa and Cardosas squares are the spaces with the most noticeable performance decrease. These are also the spaces where activity levels are far lower than what would be expected. A pattern can start to be identified here. In fact, the main differences in the urban life dimension are related to each space activity levels. Despite the fact that the majority of spaces were designed with heavy usage in mind, actual usage numbers tend to be lower than what was originally intended, which could imply that space managers, designers and promoters do not have the necessary knowledge on how to create successful, i.e. heavily used spaces.

The physical design dimension, although accounting for 40% of the total number of indicators, and therefore of the global publicness score, is characterized by small changes, as the majority of the projected physical features are often incorporated into the final result. Nevertheless, elements such as climate comfort provision have the possibility of an unexpected improvement, due to the effect of other choices in the design stage. Spaces such as Waterloo Square do in fact experience an increase in its partial score, due to this effect.

Although there is an intention to create valuable spaces, most of public and semi-public space users fail to present the same level of enthusiasm. The different aspects comprising the human connection are often addressed with an acceptable level of care, implying that designers and their clients are aware of at least some of the main premises guiding a public space project. The only exception here is Trindade station Square, designed to fill the 'dead' space between the street and the station building, while complementing this transport infrastructure. Also, and while there might be a handful of spaces in a city with a special value, generating feelings of belonging and other important psychological effects, not all spaces in the city will generate the same effect over its users. Despite the fact that the enactment of freedom tends to relate to space's ownership scheme, users opinions can shift due to the function of nearby buildings, increasing the indicator score.

Finally, the management dimension is the one where a more striking reduction in publicness levels is visible. While there is often a greater concern in making sure that everything 'runs smoothly' during the course of each project, the move towards the operation stage is often characterized by a number of concessions. Communication becomes less frequent, openness to external input is reduced, and issues are more weakly addressed therefore reducing each space's performance.

Summing up, if a space's project correctly incorporates publicness in its features and basic operation premises, if 'everything goes as planned', meaning that no major changes take place, a successful place is likely to take shape, even if a small publicness score reduction might be expected.

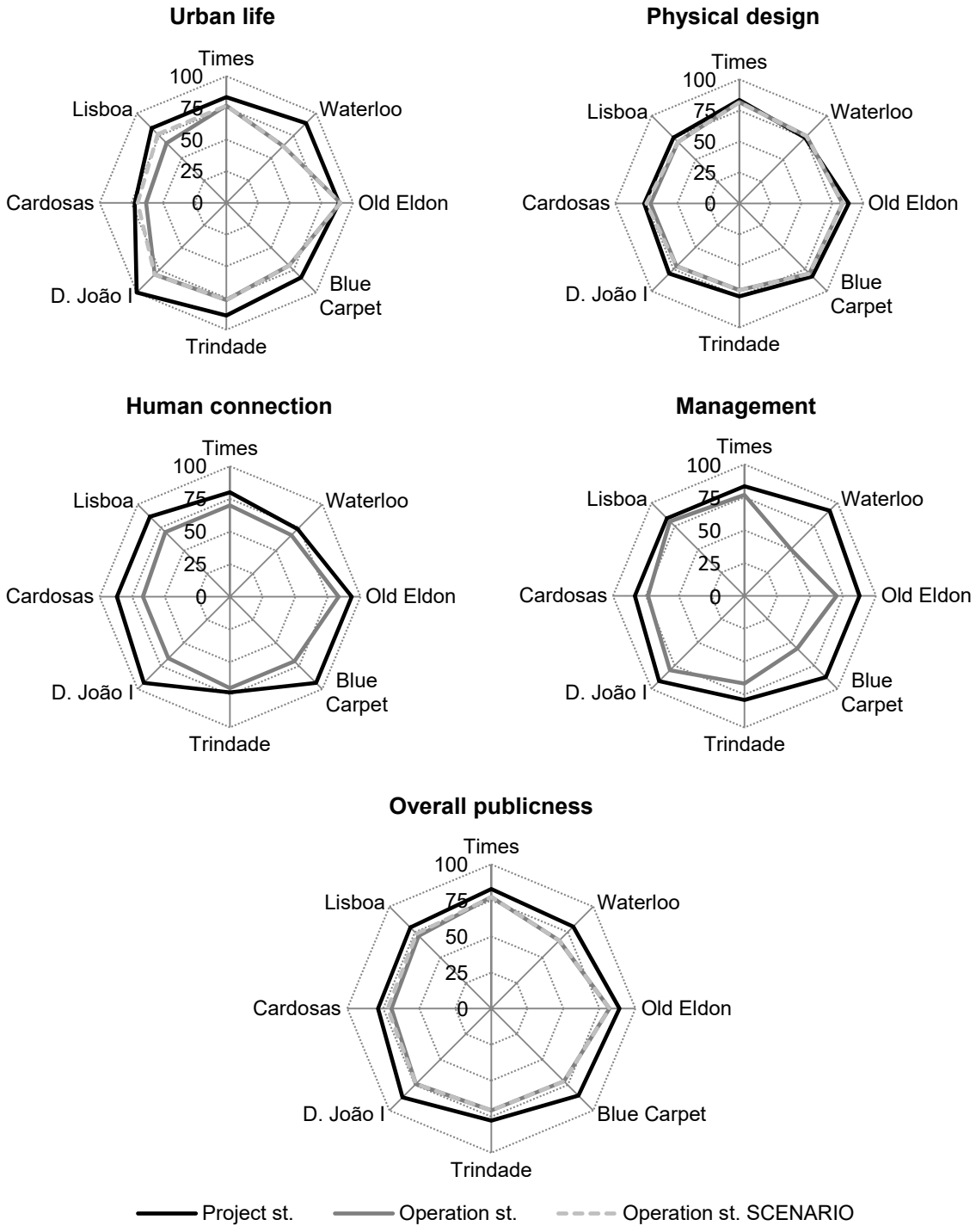


Figure 6.16 – Publicness evolution graphical representation

As mentioned in the beginning of chapter four, previously developed publicness studies lack the integration of a weighing system, in order to emphasize the most valued features through the used indicator system, either in general terms or for a specific target group. Mathematical methods such as Data Envelopment Analysis, developed by Charnes et al. (1978), resort to optimization procedures to choose the weights that would assess each case study in the best possible light (Lopes & Camanho, 2013). For a proper application of this method, a balance between the number of case studies and indicators is required, or, in alternative, a higher number of case studies comparatively to the overall number of indicators. Unfortunately, this study, with fifty indicators for just eight case studies presented none of the above scenarios. As a result, a different method for the assessment of the weights to consider in this study was necessary.

The interviews done as part of the data collection process were understood as a valid method to achieve this goal. Each interviewee was asked about the main features of a successful space, which was later compiled into a list containing the five most common answers, not following a particular preference order (Table 6.1). Although this was possible for the 'architects/designers', 'public authorities' and 'private authorities' groups, the lack of a structured interview process for the 'space user' group required an evaluation over the full set of prearranged questions. Although some criticism can be made regarding the bias of this method, as users were steered into a limited number of options, it is also true that the process leading into the selection of these same questions attempted to target the most essential features users would value. The occasional commentary, also recorded in the process, also proved essential in the collection of additional insights and hence providing additional validity to this method.

Table 6.1 – Most valued space features

Architects/Designers	Space user	Public Authorities	Private Authorities
Activity	Things to do	Activity	Activity
Flexibility	Physical upkeep	Visual features	Flexibility
Physical access	Safety	Safety	Visual quality
Visual quality	Seating	Quality materials	Safety
Comfort	Green elements	Coordination effectiveness	Ease of maintenance

As seen from the above table, some features appear to be common concerns across the range of actors. The existence of activity is cited by the majority of groups and the presence of 'things to do', mentioned indirectly by a large number of space users, are important factors associated with the necessity of creating a lively space. Visual quality, either through the form of its physical features or its upkeep levels is also a common concern. The quality of the materials and its suitability for the space in question concerns both public and private authorities, particularly for the maintenance costs that a decision such as that will incur in the future. Comfort appears as a valid concern for space designers, while seating and the presence of green elements appear in the list of space users, in order to justify their needs for both physical and psychological comfort. Safety is understood as one of the five most important features for all groups, except for the architects/designers group, being replaced by the importance of physical access. The creation of a flexible space, capable of hosting a variety of uses is seen as a relevant feature by both designers and private authorities. Finally, coordination effectiveness is understood by public authorities as an important aspect, which can be associated to their often complex organizational structures that can negatively influence the performance of a space, leading to increasing maintenance costs and degradation and an overall increase in fear levels.

Some of these features are, nevertheless, somehow ambiguous, meaning that they had to be 'converted' into this study's used indicators. Part of this translation process is relatively direct, meaning that concerns over 'physical upkeep', 'physical access', and the existence of 'green elements' can be directly related to existing indicators. Others, on the other hand, require a more complex interpretation.

Activity was mentioned by many as an important feature of a space, and numerous factors can contribute to it, as are the predicted pedestrian flows and the possibility for events/ public animation. Also, the incidence of blank frontages and the existence of food consumption spaces can provide important benefits concerning the attraction of public and therefore the increase of a space's activity levels. During operation stage, use variety, spatial homogeneity, user stay times, and management focus on space animation also provide information regarding this feature. Although there is not a direct indicator to measure a space's flexibility, the consideration of its suitability for public events and animation is important to assess its ability to host different types of uses, which can, in the operation stage be also measured through 'spatial homogeneity' and 'user stay time'. In the target groups of 'architects/designers' and 'private managers', the analysis of the project stage cannot rely on the assessment of effective usage, meaning that its possibility for animation can only be measured by the indicator 'events/ public animation', which will therefore count with additional valuation.

Visual quality and the features that contribute to it are quantifiable through a combination of the variety of materials, colours and textures, which make a space appealing to the eye, i.e. through its visual richness and presence of green elements and water features. Comfort, understood as important by architects and designers, is easily measurable through seating availability and its comfort and the provision of climate comfort features. No additional indicators have to be added for the analysis of the operation stage. Seating, a necessity for the space user group, is measurable primarily by its availability and comfort, and would therefore be associated with a higher weight valuation in comparison with the one used for the 'designers' group. Users also commonly refer the need for a space to provide 'things to do'. As a result, it is important for spaces to provide interactive elements, in order to stimulate interaction, reduce the amount of blank frontages to the minimum, to provide opportunities to look at, while trying to maintain a certain frequency of events and public animation initiatives. During operation stage, use variety and the provision of Wi-Fi can also back the fulfilment of this need.

The safety of a place results from a combination of factors, namely the effectiveness of its lighting schemes, the physical delimitation of the site through the form of fencing, the space's physical legibility, its visual connection to the surroundings, and the presence of CCTV and/or security personnel. Coordination effectiveness, relevant to public authorities, is directly measurable by the level of inner communication. These public authorities, by 'keeping an eye' on practically all the aspects related to the space's operation make the valuation of the indicator measuring 'outer communication' less relevant. Finally, ease of maintenance, an important feature for 'private authorities', and quality materials, a measure of equal important concern for 'public authorities', can be transposed to the indicator measuring the physical upkeep condition, as the correct choice of materials will prove useful in the long term maintenance of the space.

Some differences exist in the adopted weighing scheme between project and operation stages, required in order to maintain a 30% valuation over the base classification scheme, i.e. with equal weights for all indicators. The following table and figure show the discrimination of the adopted weighing system and its implications on the publicness of each space, for both project and operation stages, including the proposed scenarios for Cardosas and Lisboa Squares.

Table 6.2 - Indicators due to additional valuation

Architects/ Designers		Space Users	
Indicator	**Weight**	**Indicator**	**Weight**
Project stage			
Pedestrian flows	1,5	Blank frontages	1,5
Blank frontages	1,5	Events/ public animation	1,5
Regard to consumption	1,5	Interactive elements	1,5
Events/ public animation	4,0	Regard to consumption	1,5
Physical access restriction	3,0	Physical upkeep	3,0
Physical upkeep	2,0	Lighting effectiveness	2,0
Visual richness	2,0	Fencing delimitation	1,5
Green elements/ water	2,0	Legibility	1,5
Seating availability	2,0	Visual connection	2,0
Seating comfort	2,0	Seating availability	2,0
Climate comfort	2,0	Seating comfort	2,0
		Green elements/ water	3,0
		CCTV	1,5
		Staffed security	1,5
Operation stage			
Pedestrian flow	2,0	Pedestrian flow	1,5
Blank frontages	1,5	Use variety	3,0
Use variety	2,0	Events/ public animation	1,5
Spatial homogeneity	2,0	Blank frontages	1,5
Stay time	1,5	Interactive elements	1,5
Focus on space animation	2,0	Regard to consumption	1,5
Regard to consumption	1,5	Wi-Fi availability	1,5
Events/ public animation	3,0	Physical upkeep	3,0
Physical access restrictions	3,0	Lighting effectiveness	2,0
Physical upkeep	1,5	Fencing delimitation	1,5
Visual richness	2,0	Legibility	1,5
Green elements/ water	2,0	Visual connection	2,0
Seating availability	2,0	Seating availability	2,0
Seating comfort	2,0	Seating comfort	2,0
Climate comfort	2,0	Green elements/ water	3,0
		CCTV	1,5
		Staffed security	1,5

Public Authorities		Private authorities	
Indicator	**Weight**	**Indicator**	**Weight**
Project stage			
Pedestrian flow	1,5	Pedestrian flow	1,5
Blank frontages	1,5	Blank frontages	1,5
Regard to consumption	1,5	Regard to consumption	2,0
Events/ public animation	3,0	Events/ public animation	4,0
Visual richness	2,0	Visual richness	2,0
Green elements/ water	1,5	Green elements/ water	2,0
Lighting effectiveness	1,5	Lighting effectiveness	1,5
Fencing delimitation	1,5	Fencing delimitation	1,5
Legibility	1,5	Legibility	1,5
Visual connection	1,5	Visual connection	1,5
Physical upkeep	3,0	Physical upkeep	3,0
Inner communication	3,0	CCTV	1,5
CCTV	1,5	Staffed security	1,5
Staffed security	1,5		
Operation stage			
Pedestrian flow	1,5	Pedestrian flow	1,5
Blank frontages	1,5	Blank frontages	1,5
Use variety	1,5	Use variety	2,0
Spatial homogeneity	1,5	Spatial homogeneity	2,0
Stay time	1,5	Stay time	1,5
Focus on space animation	1,5	Focus on space animation	1,5
Regard to consumption	2,0	Regard to consumption	2,0
Events/ public animation	2,0	Events/ public animation	3,0
Visual richness	3,0	Visual richness	3,0
Green elements/ water	2,0	Green elements/ water	1,5
Lighting effectiveness	1,5	Lighting effectiveness	2,0
Fencing delimitation	1,5	Fencing delimitation	1,5
Legibility	1,5	Legibility	1,5
Visual connection	1,5	Visual connection	1,5
Physical upkeep	3,0	Physical upkeep	3,0
Inner communication	3,0	CCTV	1,5
CCTV	1,5	Staffed security	1,5
Staffed security	1,5		

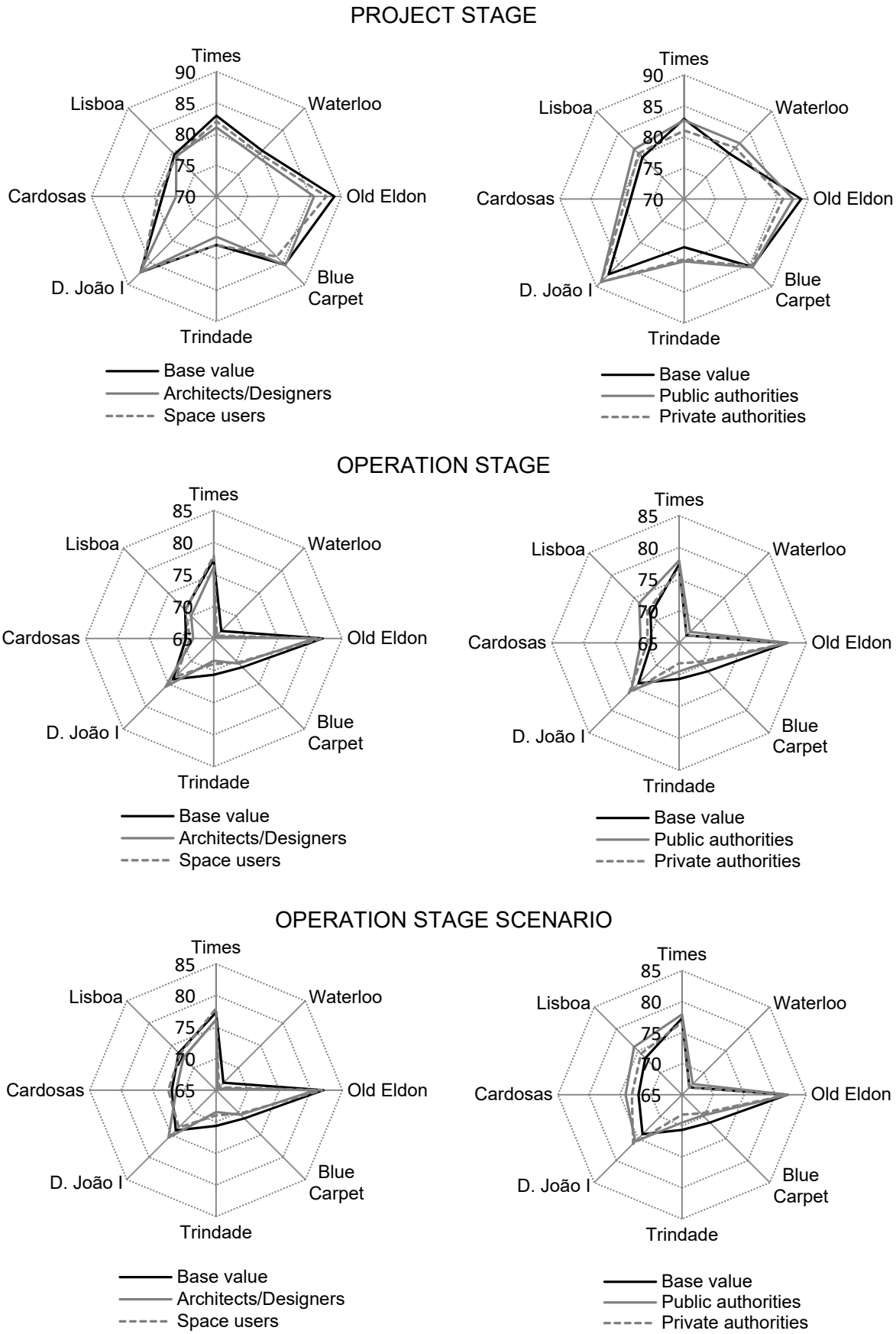


Figure 6.17 – Publicness score for each target group

Table 6.3 – Publicness score difference from the base scenario

	Architects/ Designers	Space users	Public authorities	Private authorities
Project stage				
Trindade	-1,31	0,00	**2,29**	**1,96**
D. João I	**0,08**	-0,25	**1,71**	**1,71**
Cardosas	-2,16	**0,78**	**1,43**	**0,78**
Lisboa	-0,40	-0,40	**1,89**	**0,90**
Times	-1,86	-0,88	-0,23	-1,86
Waterloo	-1,26	-0,60	**2,34**	**1,36**
Old Eldon	-3,27	-1,31	-1,31	-2,94
Blue Carpet	**0,15**	-1,81	**0,15**	-0,18
Operation stage				
Trindade	-2,21	-1,69	-1,18	-2,46
D. João I	**1,64**	-0,67	**1,64**	**2,15**
Cardosas	-1,13	-0,62	**1,69**	**0,67**
Lisboa	-1,33	-0,05	**2,51**	**0,72**
Cardosas SCENARIO	-0,72	**0,56**	**2,10**	**1,08**
Lisboa SCENARIO	-1,03	-0,26	**2,56**	**1,03**
Times	-1,18	**0,62**	**0,62**	-0,67
Waterloo	-1,28	-1,03	**0,77**	0,00
Old Eldon	-1,23	-0,21	**0,05**	**0,05**
Blue Carpet	-0,82	-1,08	-1,59	-2,10

The first conclusion that strikes from the adoption of this weighing system is the lack of comprehensive changes in any of the eight spaces' performance, as the largest fluctuations were below the 4% mark, considering we are dealing with a maximum hypothetical 30% difference. It is indeed surprising the reduction in performance when analysing the outcome for the architects/designers group. With regard to the project stage, all spaces with the exception of D. João I Square and the Blue Carpet experience a performance decrease with the use of this new weighing system. Both intended to be flexible spaces, and created to be the focus of public events, the projects of these two squares included important features such as the presence of street cafés, water features, quality materials, and other likeable visual features that would appeal to what this group deem important.

For the operation stage, the situation improves slightly for some of the assessed spaces, although the overall panorama is still negative. The lack of activity of the Blue Carpet, combined with the failure of the intended 'visual strategy', turns its score into the red, by classifying it lower than the base scenario. João I square is therefore the only space experiencing a performance increase. This is mainly due to the effect of the high frequency of public events during summer months, which do indeed respond to architect's concern regarding the need for activity. For the same reason, this space performs better than the base scenario when assessing the priorities of both public and private authorities, as will be seen ahead. Old Eldon Square, although overall remaining the highest classified space, particularly in the operation stage, faces a performance reduction. Even though, in theory, it presented all the possibilities for being the most successful public space, its project's lack of intention to be flexible to public events and other forms of space animation penalize its performance. It is, in fact, the space with the largest reduction in the calculation of the project stage adjusted publicness score. The situation persists in the

operation stage, as even though the most basic physical features and activity levels are indeed satisfied during the operation stage, planned events do not exist.

The panorama for the general public, i.e. the space user group, is not satisfactory as well, being a natural consequence of the reduced and often inefficient process of public participation. By having a more active participation in the design and management of public spaces users would likely see most of their needs met. Thus, for the project stage, surprisingly only Cardosas square presents a performance increase, as it combines proper visual features, water fountains, trees, outdoor consumption spaces and seating. On the operation stage, on the other hand, this role is enacted by Times Square. Although Old Eldon Square presented, in theory, all the possibilities for being an even better space, some factors, such as the inexistence of available seating locations at peak periods, go against the responses to one of the quintessential user needs, being proper seating provision.

Public and private authorities are the groups experiencing the largest share of performance increase, both in project and operation stages. Two distinct possibilities can explain this fact. Either their list of 'priorities' is closely related to the reality of cities and their spaces, or their stronger influence over spaces' design and operation gives them greater control to shape them to their needs. Regardless of which one of the above is true, some differences exist between these two groups, even with most of their priorities being similar. The assessed spaces show a greater approximation to the concerns of public authorities. The existence of effective coordination methods in all spaces' project stage appears to be mostly responsible for the difference between public and private authorities. This difference can also be explained by the greater importance given by private authorities for the space's events and animation, which the majority of spaces fail to achieve, exception being made to D. João I Square.

The inability to properly address the space's future activity levels, in the majority of cases, has as a natural consequence a reduction in performance from project to operation stages, explaining the overall reduction in score for spaces such as Waterloo Square and the Blue Carpet. Old Eldon Square is the only space inverting the scenario, even if only marginally above the base value, for both public and private authorities. By being, by design, not suited to public events and other forms of planned animation, its operation show high activity levels, measured both in variety of uses, spatial occupation and stay periods, effectively contributing to a comprehensive performance increase in what concerns the most valued indicators. Times Square also 'falls on the good graces' of public authorities, from project to operation stage, particularly due to the weight reduction for indicators measuring the frequency of planned events and public animation, and an increased concern for consumption spaces, feature that this space introduced in its operation stage.

The predicted scenario for Cardosas and Lisboa Squares represents only a small increase in each space's score, as improvements will not take in place in each groups' most dearly valued indicators. For the general public, however, Cardosas square will hopefully represent an increase, particularly for the introduction of the water fountain, which will contribute to added interactive elements presence and an overall increase of 'things to do'. All assessed groups will also benefit from a proper treatment of the currently degraded surrounding buildings, as well as the opening of ground floor commercial units, therefore reducing the amount of blank frontages and increasing the space's potential for activity.

On average, privately owned spaces appear more suited to the mind-set of public and private authorities. This was, nevertheless, expected, as privately owned spaces are often run to minimize operation costs and/or to maximize profit, something that public authorities are often not faced with, even though they might desire it, within the spaces under their 'jurisdiction'. Porto's spaces are also more suited to the preferences of all user groups than its Newcastle counterparts, particularly from their greater emphasis

on natural surveillance, i.e. lack of CCTV and security personnel, and greater concern for space animation, effectively materialized in a higher frequency of public events.

6.2.6. USE PATTERNS

As presented in the previous chapter, each of the eight case studies in this work was characterized by distinct usage patterns, ranging between clearly underused spaces, regardless of the daily or yearly period, to heavily used public spaces across all seasons. Beyond the effect of each space's intrinsic features, such as the number and quality of amenities, comfort conditions, and visual setting, the wider urban dynamics can be of interest to this assessment.

The desertification of Porto's historic centre, phenomena usually called the 'donut effect', is clearly visible when analysing the number of residents in the vicinities of Cardosas and Lisboa Squares (Figure 6.18). On the other hand, in Newcastle this effect is not as pronounced, as population numbers are relatively consistent across all four spaces at the 1000m radius. However, population numbers appear to be irrelevant to the establishment of heavy usage patterns. As both eight case studies are located in the central districts of the two cities, where the residential function is not as predominant as in other urban locations, it is safe to assume that local residents' preferences in terms of public space usage are not crucial in the success, measured through use intensity, of these space types, as was already defended at the evaluation of the assiduity of each space's users.

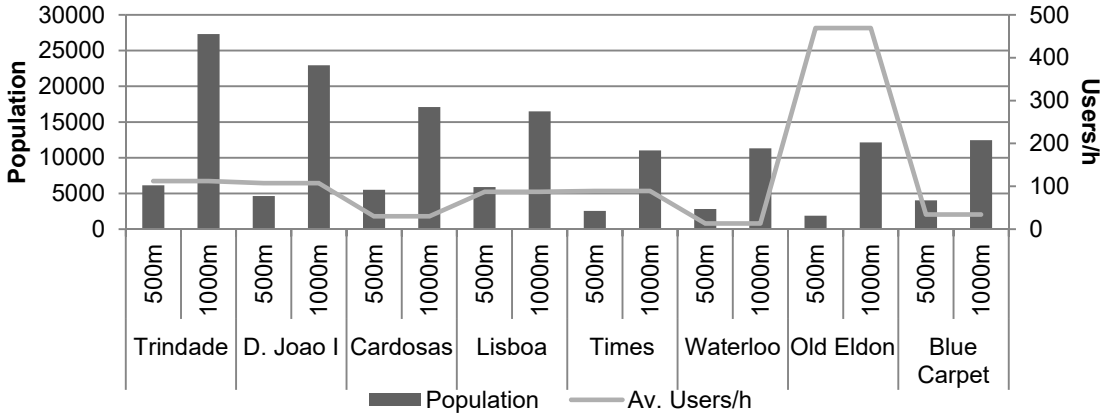


Figure 6.18 – Nearby residents and average use comparison

In Porto, approximately one quarter of the nearby residents in each of the four case studies is over 65 years old, while in Newcastle this number is five times lower (Figure 6.19). Although, on average, Porto's case studies indeed present a higher percentage of elderly users, the values fluctuate on a large scale making it inaccurate to affirm that a direct correlation might exist. Cardosas square presents the highest percentage of elderly users, although this number is mostly composed of strolling tourists who spend some time gazing at the space's surrounding buildings. This fact can also be found, although with a weaker intensity in Lisboa and D. João I Squares. Old Eldon Square stands out from the remaining Newcastle spaces, due to its comfort features that can effectively provide suitable comfort conditions for resting and leisure periods. In terms of pedestrian traffic, the older group of the population is more representative in Old Eldon Square, to whom the nearby shopping centre and traditional market are of great importance. Times and Waterloo Squares, by being located further away from the main central district, are less integrated into their normal pedestrian routes.

Users comprised in the group 'adult' form not only the most relevant resident age group, ranging between 30 and 50%, but also the most representative user and pedestrian group. Still, this situation was expected, as it comprises the largest portion of the total population, including everyone between 25 and 64. Trindade station Square is the space where 'adult' users represent the smallest portion of the total number of users and pedestrians, due to the ability of Porto's metro system of effectively capturing all sectors of the population pyramid.

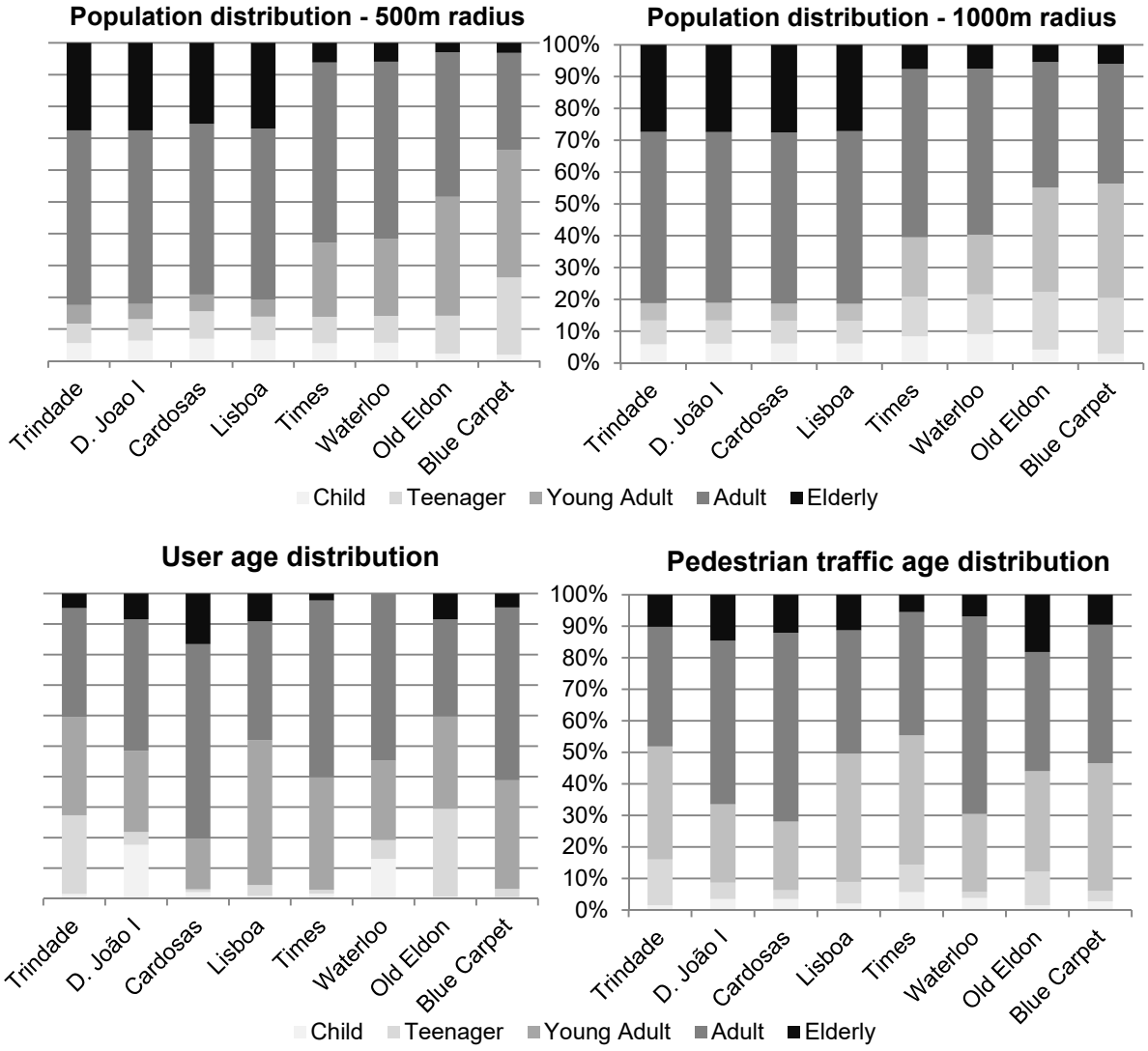


Figure 6.19 – Nearby residents, user and pedestrian traffic age distribution

Even though young adults and teen residents are significantly more representative in the proximity of Newcastle's spaces due to the adjacency to the city's main upper education facilities, both cities present generally similar percentages of these age groups in what concerns general use. The lack of 'things to do' strongly penalizes Cardosas square, while on the other hand, Old Eldon and Trindade station Square, for its strong activity and possibilities for use and the adjacency of the metro station, respectively, can capture more effectively a higher chunk of the younger users. The analysis of pedestrian traffic shows a stronger balance, although D. João I, Cardosas and Waterloo Squares clearly underperform, showing that these spaces are not efficiently integrated in the younger users' main pedestrian routes. Teenagers and children are often a minority in the overall user base of all spaces, exception being made to D. João

I and Waterloo Squares. While in the first case, the morning performances at the Rivoli theatre can attract a significant number of younger users who gather in front of this equipment, the relative quietness of Waterloo Square makes it an attractive space for parents to play with their children.

Apart from population analysis, one must take into consideration the integration of each space with the nearby activities and attraction points (Figure 6.20). Public buildings are the first main category to assess. All buildings associated with civic functions, as is the case with the city hall building, courthouses, and public institutions featuring customer services, work as important traffic generators, combining high numbers of workers and customers. Public spaces, let them be other public or semi-public squares, small green areas or even large public parks, form another important category. While urban squares in city centres will never generate the same public appeal as large public parks and other similarly sized green spaces, their main goal is to create a break from the overall density of the urban setting, being natural spaces for urban congregation. For that purpose, different public spaces can complement each other.

Transport hubs, namely train, metro and coach stations, are often one of the most important, if not the most important traffic generators in the city centre, due to the strong pedestrian traffic originating from a single location. Bus stops were not included in this proximity analysis as its scattered presence throughout city centres distributes public transport users more efficiently through the urban structure. Theatres, cinemas, libraries and concert halls, known to be important attraction points for the public in sporadic periods, were also included in the category 'cultural facilities'. Museums, although also being 'houses of culture', form a category of its own, due to its greater tourist attraction potential. As tourists are often keener to explore the city, its buildings, and public spaces, comparatively to the city's residents, museums present greater potential for the usage of public spaces in its vicinity. Hotels, which constitute a temporary residence for these tourist groups, are, consequently, also another important category to assess. Buildings destined to educational purposes, ranging from primary schools to higher education facilities, are relevant to this analysis, as students are known to be one of the best target groups for space appropriation schemes. Students are also prone to include public spaces in their daily path to and from home, and therefore can benefit from high quality spaces. Health facilities, such as hospitals, major clinics and other minor public health care facilities are also a key category, mainly for its potential for the creation of high pedestrian flows, formed from patients and its visits, and staff.

Shopping centres and other leisure locations, slowly replacing traditional public spaces as natural locations for 'flânerie' and the occasional weekend stroll, can form an important reciprocal relationship. Markets, although being replaced by large shopping centres and supermarkets, still form a relevant category. As most of these spaces present some significant architectural features or historic context, they also work as tourist attractions on its own. Finally, churches can also become important focal points, with special regard to the older sectors of the population, although with a limited influence as they only work as significant traffic generators during mass periods.

In the absence of strong gathering spaces close to their main pedestrian entrances, all these urban elements can rely on public and semi-public spaces for that same purpose, therefore increasing usage numbers and turning the urban scene into a livelier one. It is important to note, nonetheless, that this analysis might be biased, as it does not consider the size and relevance of each of these attraction points in the overall urban structure. Different sizes, functions, activity intensity, among other factors, are decisive in the number of users attracted to them, and, therefore, with possibility to influence the appeal of each assessed space. This is the reason explaining its non-inclusion in the main publicness evaluation model.

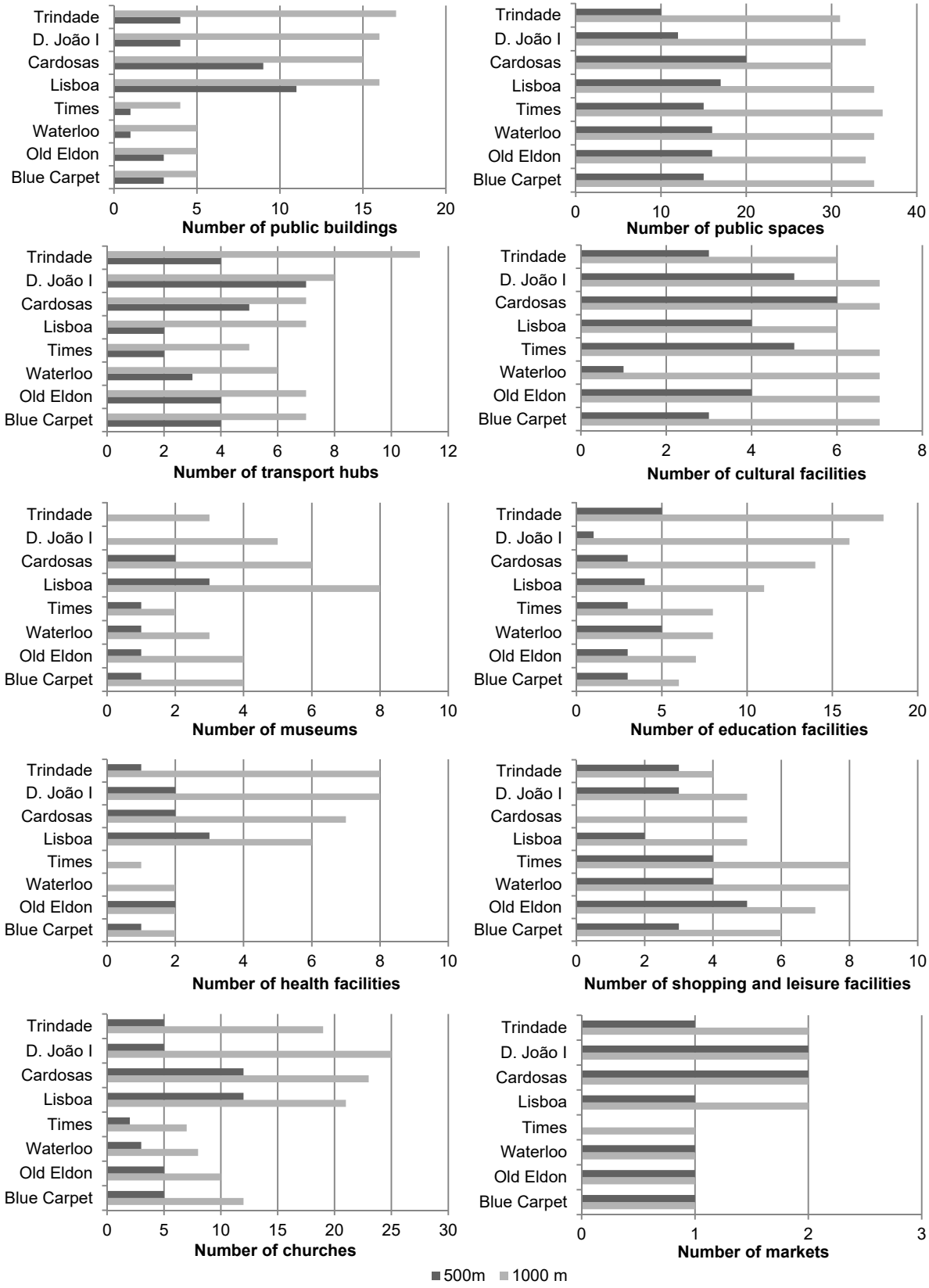


Figure 6.20 - Proximity to important urban facilities

Porto's public spaces benefit from a greater proximity of public buildings, with the difference commonly being greater than three times the number of similar facilities found in Newcastle. Still, the greater national relevance of Porto and the greater fragmentation across the main urban core of public services in Portugal can partly explain this fact. On the other hand, both cities present a similar concentration of public spaces, in both the close (500m) and medium range (1000m).

In general, Porto's public spaces benefit from a greater number of attraction points relatively to its Newcastle counterparts, being the category of 'Shopping and Leisure' the only one where the scenario inverts. In this respect, if this analysis included area assessment, the presence of the Eldon Square Shopping Centre would tip the scale towards Newcastle even further. Overall, and while Porto's public spaces would present far greater potential for use than similar spaces in Newcastle, the numbers tell a completely different story. Even if removing the outlier that is Old Eldon Square, no connection can be found between the proximity of major urban elements, in any category, and the space's usage intensity. Although this might have been a consequence of the selection of case studies, only close proximity to important urban facilities, i.e. immediate adjacency, has in fact a visible effect in the usage intensity of a public space, causing visible disruptions of its daily pattern of operation, either by the generation of abnormal pedestrian flows or by the gathering of large crowds in its proximity. These can range from cultural facilities, as is the case of D. João I Square, to large shopping centres or transport hubs, which can be found in the direct vicinity of Old Eldon and Trindade station Squares, respectively. Nevertheless, the inverse can also occur, as was visible in the previous chapter, meaning that if a given public space is heavily dependent on the operation of a given facility, changes in its operation schedule, or it even its permanent closing, can severely reduce its visible use.

The integration of a space in the urban network, as seen before, can be essential to the establishment of high pedestrian flows and the space's success, in par with factors affecting its physical and functional features. As a result, this study also intended to judge the relevance of the density of commercial activities and other amenities found in ground floors, i.e. with direct connection to the public realm, within a short walking distance, for each space's usage levels. The first main conclusion to extract from this analysis is Porto's larger number of commercial activities (Figure 6.21 and Figure 6.22). This is due not only to a denser street network and building stock, but also to the smaller area of each individual retail facility, allowing a greater variety of uses in a similarly sized area. As a result, Trindade station Square, the 'worst' performer of Porto in terms of ground floor use density, is closer to Old Eldon Square, the 'best' performer of Newcastle. Also, in relative terms, Porto's vacant ground floor units are more representative than in Newcastle, meaning that, if in a hypothetical scenario all ground floor spaces were used, the difference between the two cities would be even higher.

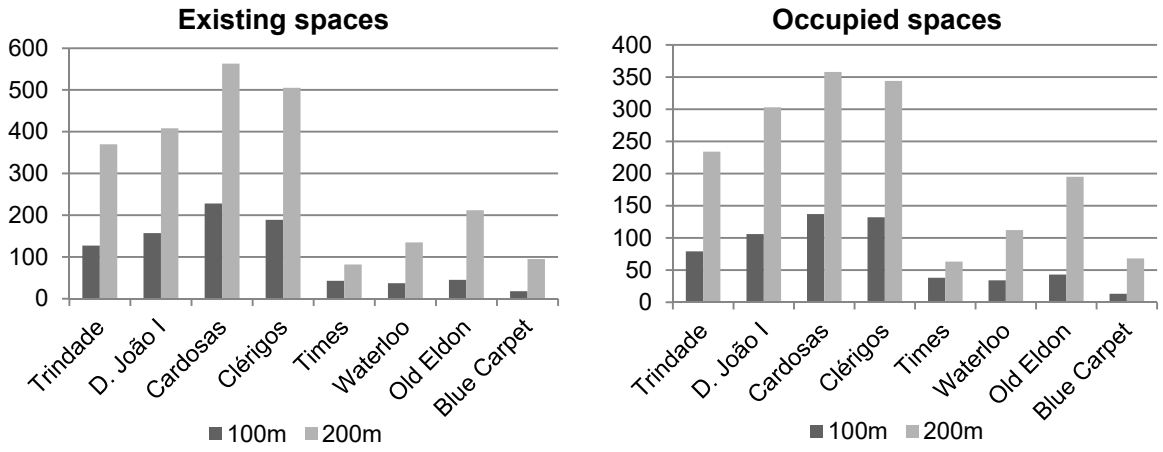


Figure 6.21 – Total number of existing and occupied ground floor spaces around case studies

Figure 6.22 – Commercial density around Porto (left) and Newcastle (right) case studies

As seen in the table in the following page, in Porto, general retail makes up for more than half of ground floor commercial uses, both at the 100m and 200m radius, while in Newcastle only Old Eldon Square displays a similar pattern. This indicates a tighter concentration of the central retail core of Newcastle city centre, and simultaneously an overall smaller size in comparison with Porto. If the influence of these commercial activities was significant, a bell-shape pattern would be clearly visible, in virtue of the retail spaces' operation hours. Still, only Old Eldon registers that pattern, indicating its profound relevance to the movement patterns of Newcastle's shoppers. D. João I and Cardosas squares although starting and ending the day with increasing and decreasing pedestrian traffic evolutions, respectively, are characterized by peaks at periods B and E, mid-morning and mid-afternoons, respectively. In these two spaces, the influence of general retail in their vitality seems less relevant. Although not characterized by a similar commercial activity distribution, Times Square and the Blue Carpet share a similar bell-shape pedestrian traffic pattern. Their importance as a pedestrian thoroughfare to and from the city centre is likely the most pertinent justification for this fact.

Although spaces surrounded by a homogenous mix were expected to present less variation in the average daily patterns, only Waterloo Square matched those expectations. Still, this is possibly the consequence of the overall reduced pedestrian flows and activity levels that characterize this space. A space with minimal use throughout the day will reflect its inability to catch a significant user presence regardless of the daily period at stake. Nevertheless, Waterloo Square is characterized by an increase towards the end of the day. Its adjacent area, characterized by a stronger focus on the evening economy, with a higher concentration of bars and restaurants, can be an important in the definition of this configuration. Similar patterns can indeed be verified in Lisboa Square, which shares a similar concentration of night-time economy establishments. Times Square, on the other hand, experiences heavy commuting traffic throughout the day and, therefore, did not present a similar evolution, albeit being in close proximity with Waterloo Square, and therefore sharing most of its medium range commercial distribution.

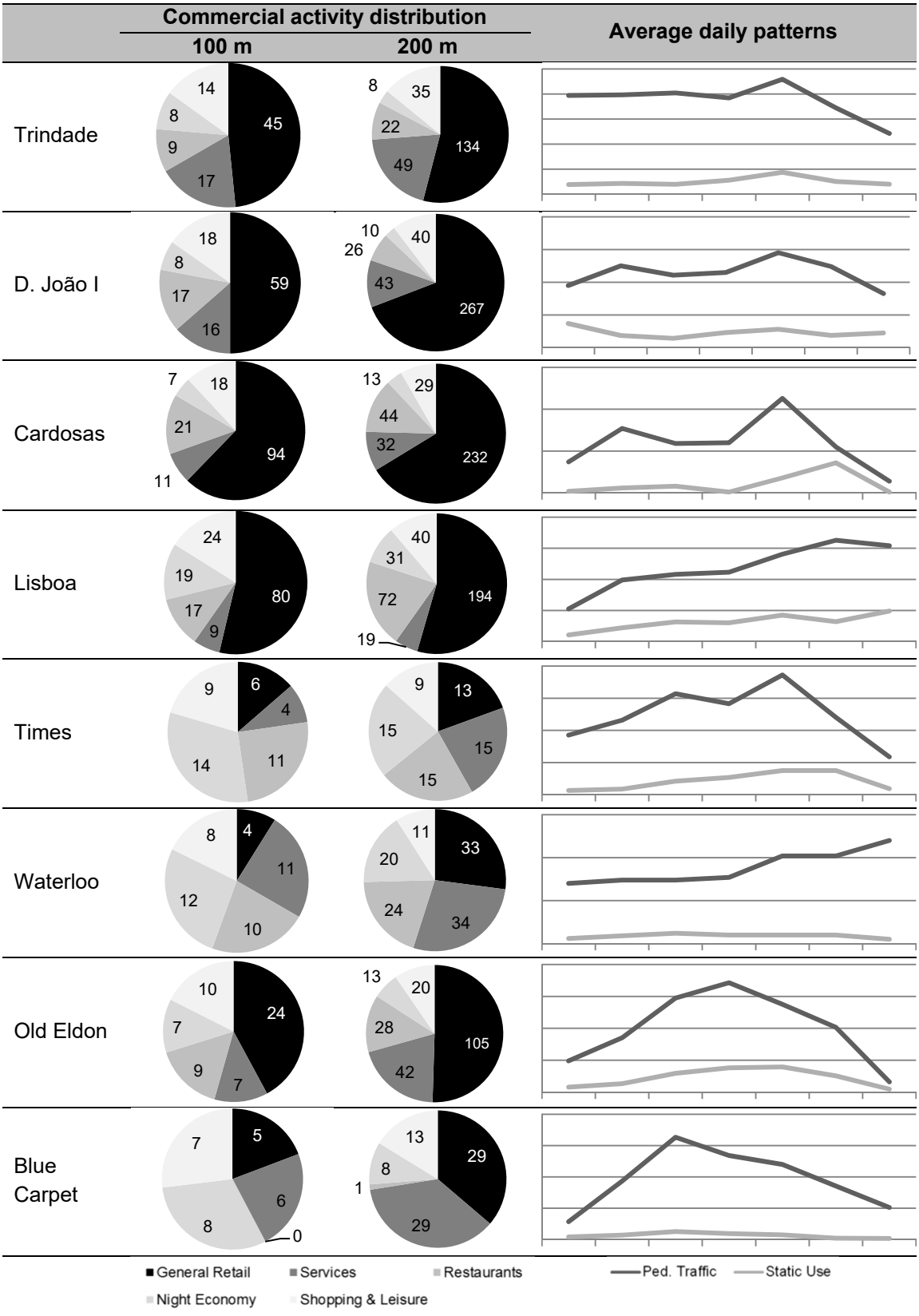


Table 6.4 - Commercial activity characterization and general use patterns

Although it is important for a space to be located within a lively commercial district, presenting different possibilities for its users, the characterization of the different commercial activities that characterize this urban structure, particularly in the short range, do not have a strong influence in the definition of its daily usage patterns. Its inclusion in the overall pedestrian network, the age group distribution of its users and its overall intrinsic physical and functional features will be main defining factors of pedestrian traffic and effective usage daily evolution.

On a different note, it is widely known that intense use is often illustrative of a successful public space, and high pedestrian footfall usually carries the number of effective users upward. The pass-use ratio, representing the quotient between the average number of pedestrians and effective users for each of the seven daily periods, was calculated in order to determine the accuracy of this premise (Figure 6.23). If it were true, usage peaks would coincide with peaks in pedestrian traffic, both in higher and upper limits, and the ratio's value would remain mostly unchanged throughout the day.

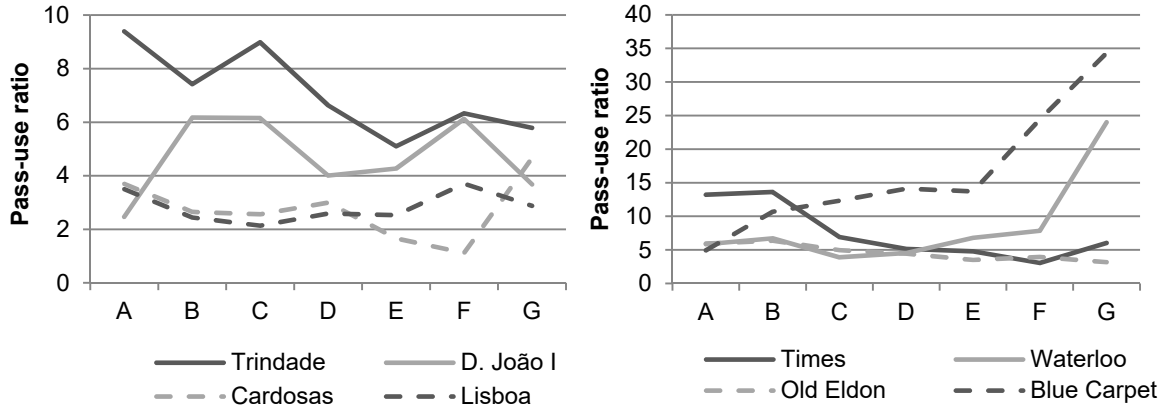


Figure 6.23 – Pass-use ratio for the assessed case studies

However, the results among the assessed spaces vary greatly. Lisboa and Old Eldon Square are the only spaces where this ratio remains with little variation throughout the day. Newcastle spaces often have a higher pass-use ratio when comparing them with Porto's spaces, most likely the result of heavier pedestrian flows throughout the day.

Waterloo Square and the Blue Carpet are characterized by similar evolutions, although justified by different reasons. While in the first case the significant increase in pedestrian traffic, due to the nearby night-time economy commercial units, combined with the space's absence of user fixation opportunities, is the main justification, in the Carpet the reduction in the number of effective users is more intense that the overall pedestrian traffic, due to the space's poor lighting conditions and lack of overall appeal of the adjacent area. Times Square is characterized by a reduction, as the importance of commuting traffic is more relevant that the expected reduced nighttime usage of its street cafés. A similar tendency can be visible in Trindade square, even with food consumption replaced by simple standing use.

Cardosas square, surprisingly, presents a ratio increase in the last daily period, although the space's irregular operation schedule during observations is more relevant than its poor lighting conditions and subsequent inexistence of public life. In normal operation, neither users nor pedestrians will take advantage of this space, meaning that the ratio will take the unitary value at period G, and therefore will present an overall decrease tendency. Finally, in D. João I Square, daily fluctuations are the result of the presence of Rivoli theatre, which attract a large number of users who gather in front of this infrastructure.

In the evening period, for example, pedestrian flows are effectively weaker than in the rest of the day, but effective static usage is not on its lowest point, leading to a ratio decrease.

Another interesting phenomenon in the use of public spaces is its physical distribution in terms of its edges and central sections. Normal conventions state that the psychological concern of being safe in a public space will lead user to initially seek the space's edge, with a move towards the central sections only when its edges reach its saturation point. For this assessment, each space's edge effect ratio was therefore calculated (Figure 6.24), with an imaginary line three meters away from the space's outer limits or main pedestrian paved route defining the boundary in question. Hence, if these assumptions were correct, this ratio would often present high values, with a reduction expected at peak usage periods. However, the results were no short of surprising.

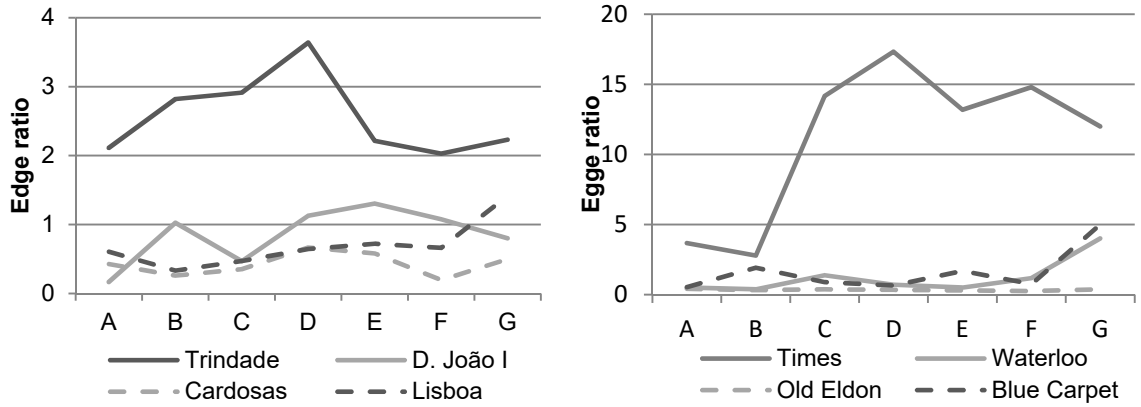


Figure 6.24 – Edge ratio for the assessed spaces

In most spaces, this index is above the unitary value, meaning that the space's edges are indeed more used than their central sections. However, in squares such as the Blue Carpet and Waterloo, the less used periods often represent a centralizing tendency. In these two spaces, the main seating locations are not placed across its central sections, but spread throughout it, either in formal and informal locations, which could explain this phenomenon. Although this might just be the result of the observation days or their particular physical features, this could also mean that in less used spaces the usual convention does not apply, and users tend to choose their preferred locations freely.

Trindade and Times Squares present a ratio always above the unitary value, meaning that the central section is, invariably of the assessed daily period, always less used than its edges. These are also two of the spaces where the central section was designed as a large empty space. In Times Square, the seating locations along the western and northern edges and the major street café areas, located along the eastern edge, are the ones where usage is more intense. As a result, a sudden usage increase in these areas, verified since lunch hours and into evening periods, leads invariably to an immediate effect on this ratio. Similarly, Lisboa Square's ratio increases towards the evening, for the increased usage of its street cafés. On the other hand, in Trindade, the area directly facing the main station entrance, along the edge of the central square area, is throughout the day this space's most used section. Although other areas across the central section of the square show some signs of mild usage during afternoon periods, the majority of Trindade metro station square users can be found along its edges, at any given period of the day. Old Eldon Square, by being characterized by an even distribution of user across its area, presents not only a reduced but a stable ratio value throughout the day.

D. João I experiences some fluctuation during the day, but always around the unitary value. Despite its underused central section, it is usual to see users spreading across the space's edges and the main eastern steps, considered to be outside of the edge area. Finally, Cardosas square, although receiving little use throughout the day, does not share the pattern of similarly underused locations, such as Waterloo Square. Here, the value stays relatively low throughout the day, at the expense of strolling tourists along the space's central section.

As seen previously, use patterns throughout the day can vary dramatically, not only when analysing each space independently, but also when comparing the different case studies. One of the easiest measures of comparison is the creation of a rush hour ratio (Figure 6.25 and Figure 6.26), effectively homogenising each space's most used periods and comparing its order of magnitude with other less used moments. This also allows us to check whether all spaces experience its moment of greatest use simultaneously, or if other patterns can be of influence.

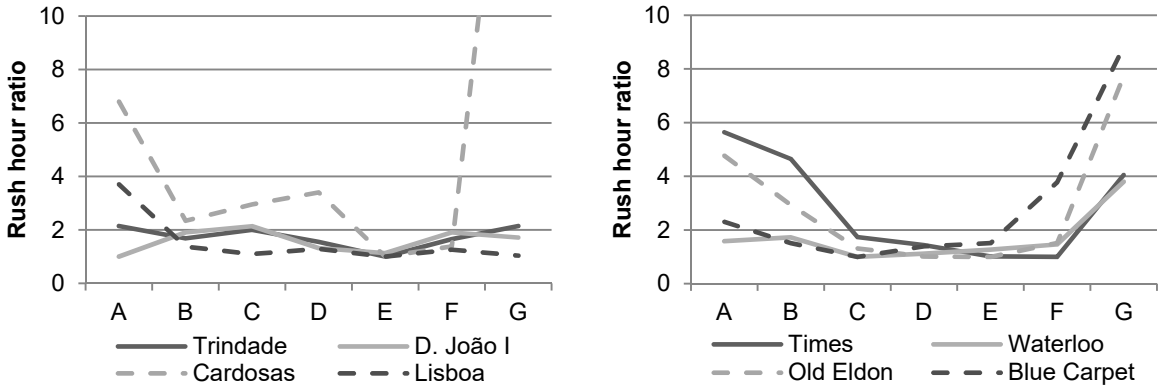


Figure 6.25 – Rush hour ratio for static use

Porto's spaces often see its rush hour period on interval E (mid-afternoon), corresponding to the unitary value of the ratio. D. João I Square is the only of the four assessed spaces in this city that have its most used period on early mornings, due to the regular field trip children gatherings in front of the Rivoli theatre. Throughout the rest of the day, values tend to vary between one and two, demonstrating the existence of little variation across the length of an average day. Other spaces in the city also present similar fluctuations throughout the day. The effect of the operation schedule of Cardosas square is clearly visible in the extremely high value of 25, purposely represented outside of the figure's boundaries, of its rush hour ratio for the evening period. This value could be even higher if some of the observations did not catch the space still open to the public and therefore with usage, even if minimal.

On the other hand, in Newcastle, rush hour periods present similar U-shape patterns, although with different levels of intensity. While in Waterloo Square and the Blue Carpet, the spaces with the least amount of users, peak usage tends to coincide with lunch hours, Old Eldon only sees its peak usage later during the afternoon (period E), and Times Square even later, more specifically during late afternoons, a consequence of its street cafés. Here, a strong assumption can be made. If spaces are designed lacking any consumption spaces and other strong attraction points, natural use will only take place during lunch hours, where a natural appropriation of public spaces will be expected. However, this occurs more intensely in countries with a strong culture of outdoor eating in a self-catering basis, which is not the case in Porto.

When analysing pedestrian traffic rush hour ratio (Figure 6.26), with the exception of Cardosas square, where its nighttime closure will obviously mean an abrupt reduction in the number of passing

pedestrians and effective users, all public spaces in Porto have a fairly consistent hourly pattern. Although Lisboa and Cardosas squares start an average day with a relative weak pedestrian footfall and reduced usage intensity, it quickly increases to the average peak values.

In Newcastle, a U shape curve, with different degrees of intensity, can be usually found when analysing the rush hour ratio of its public spaces, the exception being Waterloo Square, as its daily pedestrian patterns were already presented. Old Eldon Square is the one where this peak effect is more pronounced, due to the significantly heavy pedestrian traffic during the day, courtesy of Eldon Square Shopping Centre, and that naturally could not take place during the evening, when the facility is closed. In the Blue Carpet a similar tendency, although clearly less intense, is also visible, although here the explanation can simply be related to the reduced intensity in overall pedestrian commuter traffic between the city centre and the eastern area of the city during early morning and evenings. The same can be verified in Times Square, although in a smaller intensity at morning hours, owing to the daily pedestrian traffic between Central Station and Newcastle College.

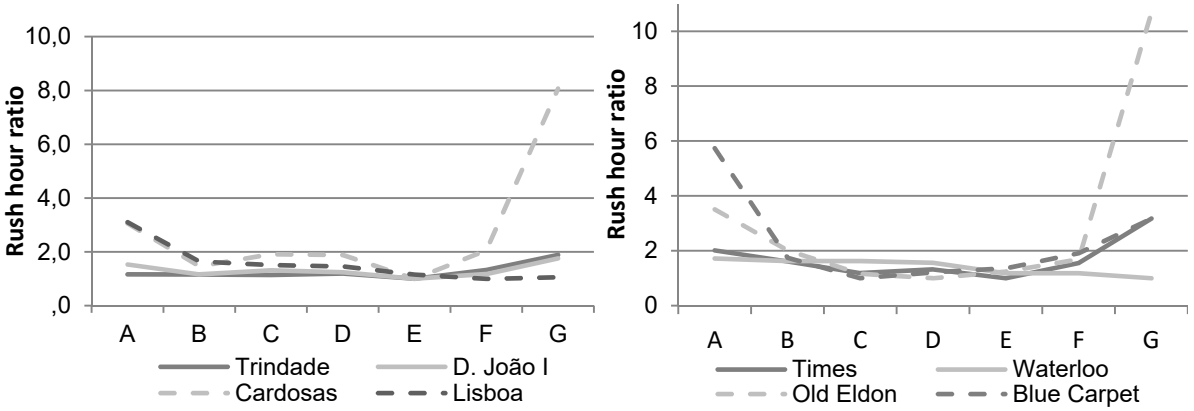


Figure 6.26 – Rush hour ratio for pedestrian traffic

Summing up, in these types of spaces peak usage will happen in different periods of the day, although afternoons tend to be the most heavily used periods. Pedestrian traffic, on the other hand, is less prone to change, and will often reach its peak at late afternoons. Spaces that fall short of expectations will present a moderately stable pattern, while heavily used spaces will present a strong discrepancy between peak and off-peak values. In all cases, spaces need to be designed for its peak usage, otherwise degradation of use conditions and excessive material rundown can take place, reducing its overall performance. Apart from the exception that is D. João I Square, due to the Rivoli theatre effect, all spaces have its peak usage during summer months, even if in spaces such as Trindade station Square the difference is not very significant (Table 6.5). As summer days present longer periods of daylight and overall higher temperatures, public space usage is anticipated not only to increase, but also to extend to later hours in the day, leaving to an overall higher average number of daily users. Also, as expected, all spaces associate rain with the least amount of usage. Cardosas and Lisboa Squares have weekends as its most used days, situation that can be explained by increased tourist activity and by a larger number of residents in the overall metropolitan area seeking for leisure and recreation at the city centre. D. João I and Trindade, by being strongly included in the overall commuting habits and under the influence of adjacent facilities such as the Rivoli theatre, show the inverse tendency. Times and Old Eldon are more popular during weekends, while Waterloo is more dependent on nearby workers. The Blue Carpet presents an almost equal distribution.

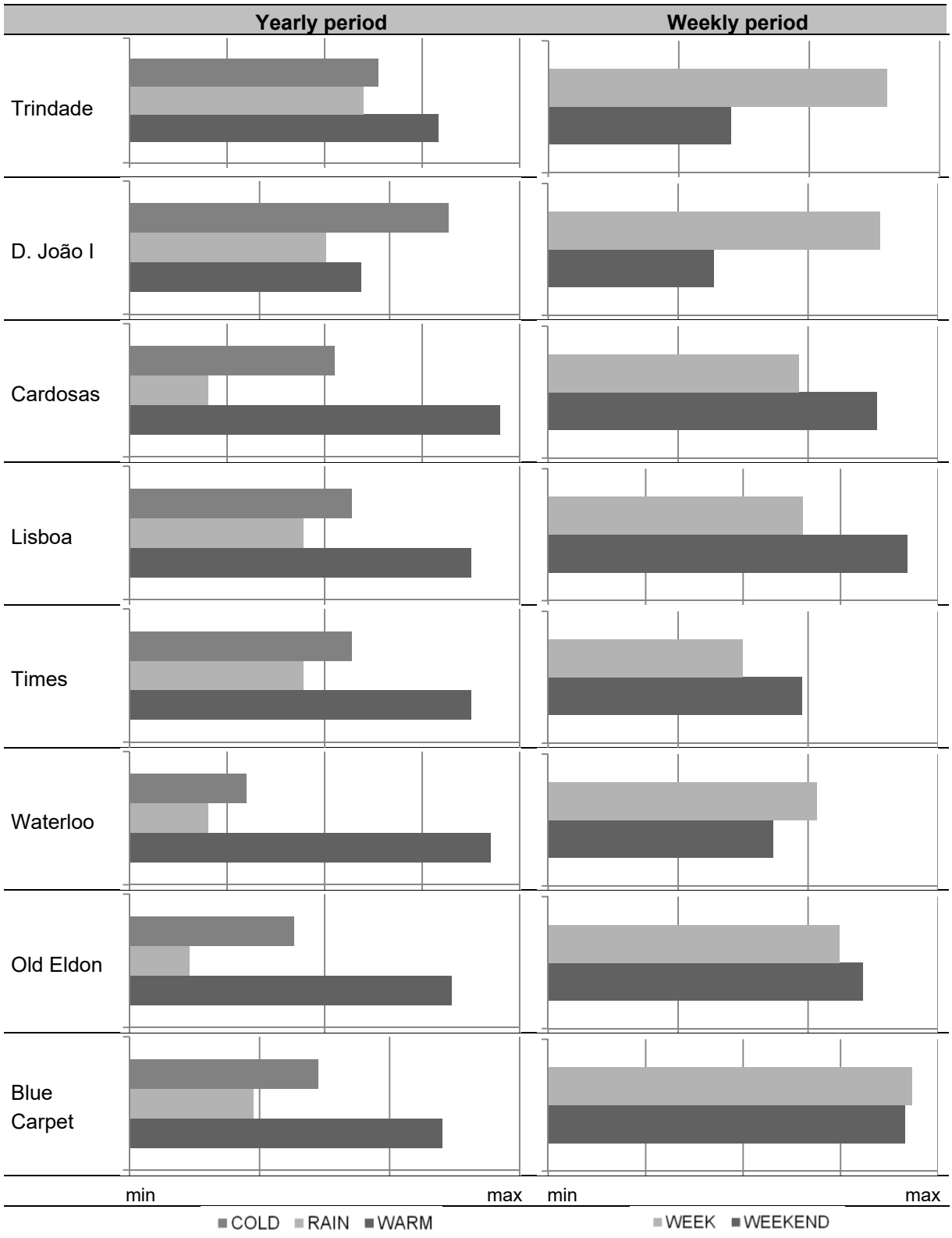


Table 6.5 – Static use weekly and yearly variation comparison

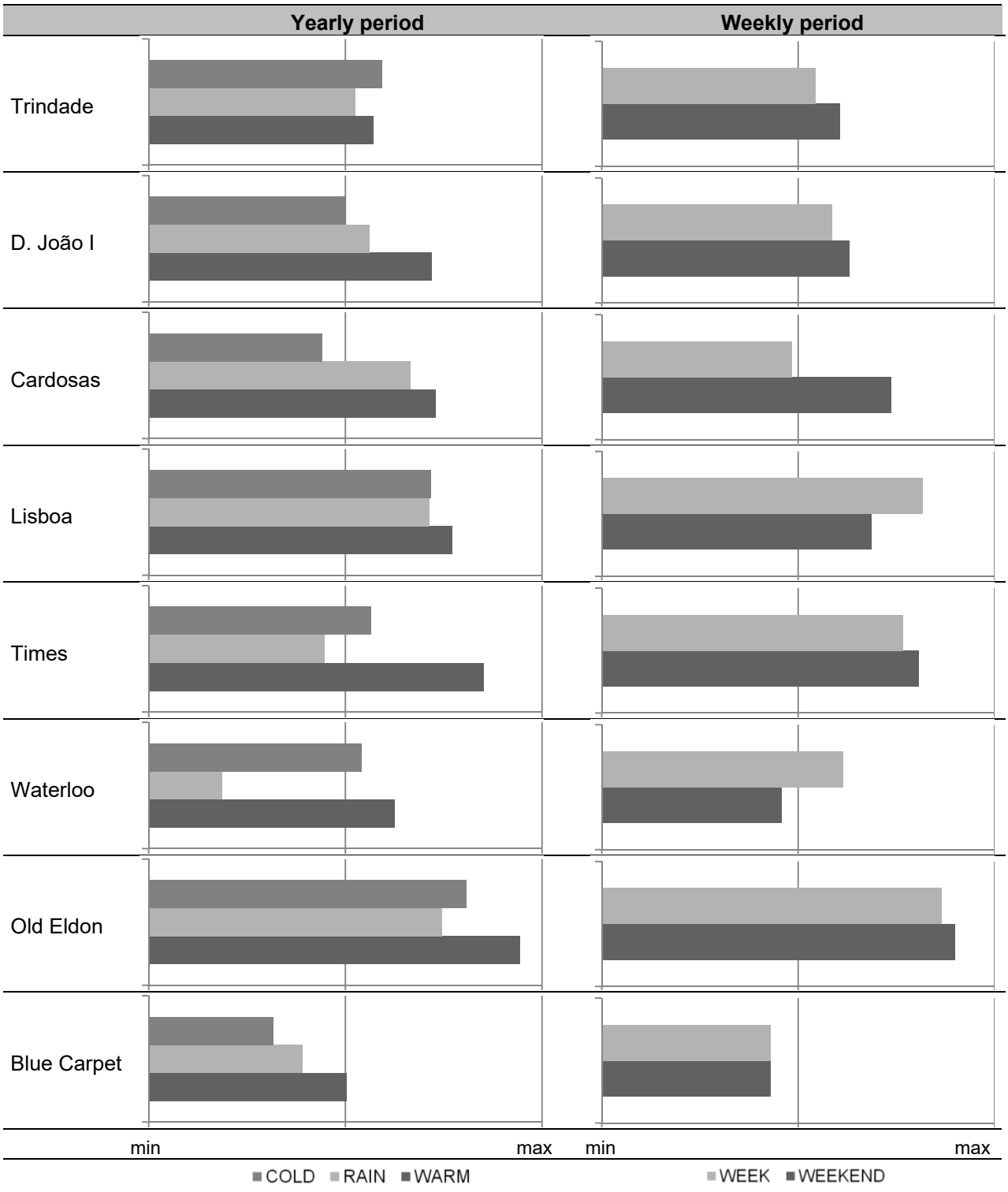


Table 6.6 – User stay duration weekly and yearly variation

Regarding the effective duration of stays, the results show a surprisingly low difference between different yearly periods, although always with summer days taking the lead (Table 6.6). This might indicate that, for this type of urban space, weather conditions are of little influence to the duration of stays. Other spaces with a strong leisure purpose would show more noticeable discrepancies. Despite this, stay periods tend to last slightly longer during the weekend, exceptions being made to Waterloo and Lisboa Squares. On the other hand, heavier usage will not exactly mean longer stays, as is the case with Trindade, D. João I and Lisboa Squares.

In conclusion:

- The proximity of a higher number of residents is not relevant to the establishment of high volumes of pedestrians or users. In the same line of though this applies to the division of this population into specific user groups;
- Adults form the largest percentage of users in a space, followed by the group composing 'young adults'. Teenagers and children are often a minority in the overall user base of a public central space;
- Commercial activity distribution, per se, does not have a strong influence in the definition of a space's daily usage patterns.
- The inclusion of a space in commuting habits will invariably lead to a stronger increase in pedestrian flows in comparison with the number of effective users;
- The presence of important infrastructures in the direct adjacency, which operate on an irregular basis will disrupt this duality;
- In less used spaces, users tend to choose any location freely within the space, rather than solely its edges;
- Spaces with little appeal for use will have its peak during lunch hours, although, in general, afternoons tend to be the most heavily used periods and the ones with more intense pedestrian traffic;
- As expected, summer days present higher usage, as non-occasional users will join the frequent users;
- Although the most used days will take place over weekends, the lack of suitable comfort conditions or the presence of a nearby important facility can shift these patterns towards regular working days;
- For spaces of this nature, weather conditions appear to have little relevance to the overall duration of stays;
- Although heavier use will induce longer stays, some exceptions can occur.

6.3. DISCUSSION

6.3.1. IS PUBLICNESS A VALID MEASURE OF SPACE PERFORMANCE?

Urban studies and particularly the evaluation of its spaces have come with a number of different terms, each attempting to develop their own interpretation of public. Why use the concept of publicness? When we think of a public space, we think of a space created for us, the public, catering for our basic needs of socialization, recreation, and democracy. By associating a space with the level of how it is considered public, we are effectively setting a palpable, visible, and widely recognized baseline for measuring its performance.

The exploration and reinterpretation of the concept of publicness could have taken diverse ways. This study could have followed the footsteps of Akkar (2003) of studying the involvement of different stakeholders throughout the several stages of a physical intervention project. However, as some of the interventions of this study, particularly the ones in Newcastle, took place more than a decade ago, the tracking of those same agents would be an extremely difficult task. This study therefore focused on the chronologic extremes of the process, namely the project itself and the finished space. As this allowed contact with professionals involved both in the design and current management stages, the major differences in the different agents' approach towards the space were evaluated, particularly on how the various setbacks and challenges were tackled. By dissecting the project intentions and the goals of its designer, this allowed verification of how the finished space matched the project's premise. A space's publicness evolution can therefore be effectively mapped, allowing a distinction between a chronicle design issue and the misrepresentation of the best intentions.

From the earlier stages of the research process, publicness was seen as a concept with great potential to the interpretation of public space and hence avoiding its use to simply justify certain cause-effect relationships. The study of Németh and Schmidt (2007), where the extent of restriction and control measures was compared between publicly and privately owned spaces, was an example of this strategy. Also, the assessment of user feedback went beyond the study of the influence of certain physical aspects to match the known feeling of a space's users (Van Mélik et al., 2007) to the inclusion of the real user feedback. Varna and Tiesdell's (2010) approach to publicness came as important foundation for understanding the complex nature of publicness and the possibilities for including it into a research methodology, particularly the importance of contacting directly with the space's management entities.

Mehta's (2014) study, although evaluating the properties of good public spaces and not publicness per se, included both public and semi-public spaces, as well as user opinion, in order not only to classify each space but also to determine the most relevant indicators. The research conducted on this thesis considered users' opinion in order to define one of the four main dimensions of publicness, but not with the goal of defining a weighing system. Nevertheless, and even though insights on the use of a basic weighing system were presented, by considering the preferences of different stakeholder groups, little changes to the original publicness scores came as a consequence, due to its complex nature. An increase in one particular indicator can cause the inverse effect on another, therefore minimizing the outcome of the introduction of these preferences. Also, an attempt was made to avoid falling into the commonly adopted premise of including ownership as one of the assessed indicators. What this means is that, for the purposes of this study, it is not relevant if the space is under public or private possession, as a number of interconnected factors will result from its ownership condition. These will have an actual effect over its publicness level.

The development of the Publicness Evaluation Model has shown that a thorough evaluation of a space's publicness counts on a number of different data collection techniques. Contrary to other space assessment methods, particularly the ones focusing on mere 'quality of space' analysis, publicness

cannot be estimated simply by a brief visual observation. A space without users is not a successful space, statement that leaves no room for discussion. It might be argued that the evaluation of its usage level is the only necessary measure for defining its success. However, a heavily used space might not possess the ideal features in order to be a successful space. Let it be for the lack of suitable spaces in the vicinity, or its sheer appropriation for cultural, political, or commercial reasons, the large range of factors influencing a space's usage justify the inclusion of different disciplines.

The evaluation of its design features does more than just see if a space 'meets the eye', as it actually justifies whether its physical configuration, conditions and amenities are prone to the proper establishment of publicness. Symbolic meaning, shared values, and sense of place are just some of the attributes and interpretations of spaces' social value that demand the evaluation of this 'invisible' feature. It is surprising why most studies have ignored the direct assessment of a space's publicness through the eyes of its users. The inclusion of the 'human connection' dimension makes possible to evaluate if the space does indeed respond to the needs of its users, who are, at least in theory, the true beneficiaries of public spaces. Finally, the inclusion of the management dimension is essential in closing the evaluation process to assess whether the authority or authorities in charge realize the full potential of the space. Simultaneously, this publicness dimension is also used to demystify the role of private authorities and the product of their influence in city building, materialized in semi-public spaces.

For all these reasons, publicness can effectively be used as a valid measure of space performance. By being developed as a multidisciplinary indicator, the PEM can also be used to understand other aspects beyond the realm of simple space evaluation, vesting itself of great value to the understanding of the city and how its different dynamics can shape its evolution.

6.3.2. Is the Public/Private dichotomy still valid?

In the purest of its definitions, the public/private distinction will continue to exist and have a valid role in the shaping process of our urban areas and daily lives. Public and semi-public spaces appear in a wide range of contexts, within a large variety of management agents, each with different expectations and interests. Privately owned public space cannot, in the current state of affairs, be limited to the spaces that mimic the corporate plaza feel, thoroughly defined and assessed by Németh and Schmidt (2007).

Newcastle's semi-public spaces are visually similar to other traditional public spaces, as most of its users are unable to properly identify its ownership nature. Simultaneously this makes its access and use appear unrestricted. In Porto, these spaces are designed and managed under a stricter scheme, with access and use control measures more easily discernible. Hence, some privately owned spaces, even if featuring physical access restrictions, are considered more valuable and meaningful than some fully open, and thus traditional, public space. If a space provides 'things to do', it will most likely be considered valuable by its users, regardless of its ownership. Porto's semi-public spaces are classified higher in the table in what concerns their comfort feeling, once again justifying the greater concern of private authorities in providing pleasurable spaces, in comparison with traditional public spaces.

What does this means for the real success of the spaces? As defended by Carr et al. (1992), our understanding of the space is not complete until the representation of its human practices, i.e. its effective usage, is contextualized. In fact, and although Old Eldon Square, the most heavily used space in this study is indeed publicly owned, other spaces sharing similar ownership schemes fall short of its intended uses, as is the case with the Blue Carpet or the garden section of Trindade station Square. The features that management authorities decide upon each space, both physical and functional, are what decide its success, and therefore its final publicness score. As Cooper-Marcus and Francis (1998) defended, a

space's management, by being responsible for aspects such as security, maintenance and animation, is crucial for its management or demise. If management veers away from the space's regular operation, its potential will almost certainly remain unexplored or, even worse, a space with a strong potential could suffer a severe hit in its possibilities for success, as is the example with the Blue Carpet. When moving from project to operation, communication inside management authorities' organizational scheme and other entities with a valid interest and concern on the space often becomes less frequent, reducing external output and the capacity to deal with issues.

As this study has demonstrated, there is in fact a generalized tendency for publicness reduction, completely autonomous of its ownership scheme or geographic context. The main reason appears to be an overtly optimistic conception regarding the creation of a heavily used space. The majority of space managers, designers, and promoters appear to lack knowledge on the true aspects or features of a space that indeed have the potential of attracting users and making them stay there. Small changes in the space's physical design are not significant, as the majority of the projected physical features are often incorporated into the final result. Also, and even though there often an intention to create valuable spaces, user assessments have shown a different picture. As some of its most basic needs are often not met, it is expected to see a reduction in user's levels of enthusiasm and satisfaction with the space.

Does this mean that semi-public spaces can work in parallel with traditional public spaces? Frequently, these spaces have been connoted with restrictive control schemes and a diminished application of the main premises of freedom. Indeed the assessed spaces have shown a tendency among semi-public spaces management authorities to address control more strictly, both in access and behaviour. However, this might not mean that publicly owned spaces take the edge. Although freedom of access has for long been an important asset of a public space, spaces which are more physically accessible do not necessarily score higher than others with restrictions at this level. Notwithstanding the fact that physical access restrictions are commonly associated with semi-public spaces, some users have pointed the function of adjacent buildings, particularly in the case of residential occupation, more relevant to the feeling of freedom in the space than other intrinsic factors.

Although in the project stage, publicly owned spaces achieve, on average, a higher score in comparison with privately owned ones, when moving towards its operation stage, this superiority becomes less noticeable. Private agents often present a greater deal of commitment regarding safety conditions and physical maintenance. While they might convey a false sensation of freedom, safety, or excitement, they might be more comfortable and visually more pleasant than its public counterparts. Therefore, a space developed by a private entity may not have a clear shortage of publicness in comparison with a public-led intervention.

Finally, a note has to be made regarding the influence of Business Improvement Districts. By operating in the boundary between the remit of public and private authorities, they establish a hybrid in the somewhat complex scheme of roles and responsibilities that shape our current cities, working towards the fulfilment of the needs and expectations of its members, often business owners and other agents who make the city their "home". For them, a vital public space is 'good for business', attracting consumers and users. By working towards the improvement of public spaces, BID's contribute positively to the public sphere. The clear differences between public and private, and that for decades defined the public/private dichotomy in city centres, might start to disappear, as privately owned spaces become more present and private authorities more involved in the process of city production.

6.3.3. ARE PUBLIC SPACES EQUALLY INTERPRETED IN DISTINCT CONTEXTS?

Although the comparison of distinct contexts was not the main purpose of this study, as they were used to assess possible publicness differences and further validate the applicability of the Publicness Evaluation Model, the opportunity to include more than one geographical context was seen, from its early stages, as an important element that could enrich the obtained results. Although the reduced number of case studies posed a problem in the achievement of strong results, this study identified some differences between the Portuguese and British realities.

The management perspective of publicness comprises more visible differences. Porto's entities, especially private ones, tend to be less keen to outer participation, especially during early project stages. For the case of projects led by public authorities, although the legal figure of public participation exists, and is often enacted, the sheer participation of the possible interested parties is, in fact, slim. Newcastle case studies, on the other hand, shown the existence of a greater propensity for collaboration with external entities, especially the general community, and when concerning large projects, as was the example of the Centre for Life. When moving towards the operation stage, however, differences between the two contexts tend to blur out. Management approach towards safety is more relaxed in Portugal, as the use of CCTV is less frequent.

There is also a greater concern towards the provision of additional amenities, such as street cafés, although this was expected, as weather conditions in the south of Europe pose conditions that are more appropriate. This justifies Porto's authorities and designers' greater concern for the climatic comfort of their spaces, although other needs for physical comfort, especially the provision of benches and other formal seating locations, are often underestimated. The nature of the Publicness Evaluation Model also identified differences among public space users' interpretations of who really owns the space, with Newcastle's pedestrians often classifying privately owned spaces as traditional public spaces, although this can be explained by the physical similarities between the assessed public and semi-public spaces.

Langstraat and Van Melik (2013) had already argued for a significant difference in governance culture between the British and the Dutch cases, similarly to what was found in this study between the British and the Portuguese cases. This might indicate a shift between the traditional Anglo-Saxon model and the rest of Europe.

This difference extends, as expected, beyond sole managerial differences. Newcastle's space users are less keen to properly identify the differences in space ownership. Also here, on average, users have an overall better opinion of their spaces, even if usage levels are not as high as expected for a successful public space. It seems that the promotion of public events, often with an important role in space animation, is not understood, both by public and private authorities, as essential to the definition of a quality space. Porto's approach is quite different. Due to the large investments in public space requalification in the last decade, the City Council has currently a quite enthusiastic approach in the promotion of public events, and private authorities started to follow a similar strategy in their spaces, even if, for the time being, shy. Nevertheless, in all of Porto's spaces there is not a great degree of spontaneous public animation events and activities, as virtually all events are scheduled and announced in advance. Although this removes some degree of unpredictability and discovery that could increase even further the attractiveness of these spaces, it is always better than to see no activity of any sort.

The approach towards the design of public spaces also shows some differences. Even though in the perspective of Porto's entities, the intrinsic value of the space is seen as an important asset, achieved through valid concerns in providing possibilities for interaction, often these premises are not fully executed. Although the premise of comfort is often weakened in the Portuguese case, particularly through the lack of seating provision, concerns regarding climatic comfort are often strongly addressed,

although this was an expected outcome as rain and higher temperatures are more frequent. Lighting schemes, on the other hand, are more poorly addressed, although this might be related to a stronger concern regarding safety and creating the conditions for the proper operation of CCTV cameras in the UK.

The analysis of the range of publicness dimensions show that different contexts can present slight variations in what is deemed relevant when designing and operating a public space. As the differences are often subtle, this might indicate that the main features establishing the essence of publicness remain unchanged regardless of the context. While different groups do indeed value different features, the strong interconnection of the several publicness elements will cause little influence in the overall performance of the space and its publicness score.

To finish this chapter, an important remark has to be made. While the eight spaces represent good examples of both public and semi-public spaces in the heart of Porto and Newcastle city centres, the selection of different cities could have provided different results, affecting the application of the Publicness Evaluation Model and the logic behind these assumptions. By focusing on just four spaces in each geographic context, these assumptions can only be seen as a first theoretical approach on how the contemporary context has shaped different authorities' approach to the creation of public space, what complexities are associated to its design and operation, and how can our cities and its residents take advantage of them.

7

CONCLUSIONS AND RECOMMENDATIONS

7.1. THESIS CONTRIBUTION AND MAJOR CONCLUSIONS

The most important contribution of this thesis was the development of the Publicness Evaluation Model (PEM), creating a structured classification system of a public space and its project, allowing an easier identification of their possible weaknesses. With such a large variety of existing approaches to the study of public space, this thesis attempted to create a unified definition of publicness, including all aspects that users, designers, and managers consider relevant, always with the intention of creating and maintaining successful spaces.

The importance of creating a successful public space and maintaining it as such has for long been a concern for public authorities, particularly for the benefits provided to the city, its inhabitants, and visitors. This study has shown that renovation of public spaces is, nowadays, often associated with high profile design, in order to promote cities as quality tourist destinations, attracting investment and aiming to improve the local economy. As spaces become an instrument to sell the city, place commoditization becomes the norm, which was particularly visible in Porto. And it wasn't just the case with publicly owned space, as semi-public spaces also work towards a similar goal, but in a narrower local promotion perspective, with the purpose of attracting residents, office, and commercial tenants. In these situations, the choice of materials and physical features are often carefully thought of in order to dignify the space and increase its exchange value, as opposed to its use value. In traditional public spaces, while their exchange value is also important, public authorities often use these interventions to launch wider urban requalification projects, with the goal of creating useable spaces.

In spite of this new trend, the space's different levels of success demonstrate that this strategy is not fully understood by the different agents involved in city production. Although being in central locations, some of the assessed public spaces did in fact experience little use. The most credible scenario defends that public spaces will never embody the same role as they did in the past, namely as the sole location for all public interaction purposes. Even though the possibilities for use and interaction remained unchanged, the arena for public interaction has widened, and public spaces now have to compete in a fiercer battleground to gain user preferences. It is users who define what they want and public spaces cannot be everything at once. As different groups seek different spaces and different spaces have different purposes, there will always be spaces with heavier use than others.

Although in the early stages of this thesis the good features of a space were said to be activity, connection to users, and a good image and form, the literature has shown that there is not a consensus regarding what specific features are essential to the creation of a space with a high publicness score, and therefore be considered a successful space. Age, gender, and cultural background are only some of the factors that can influence one's perception and, therefore, alter what is considered a good space.

One simple example is the lack of connection found between safety perception and use intensity. In city centre locations, a passing pedestrian is always a probable scenario, granting a certain, even if faint, degree of safety. It is likely that in certain less central locations, where pedestrian footfall tends to be lower, the constant presence of other users is more relevant to the experienced level of safety. Lively adjacent uses and a good visual quality seem to have a greater role in user safety perception, as the link between experienced safety and comfort levels demonstrate. For the purpose of city centre urban squares location is important, but not in the wider urban context. The intersection with major pedestrian routes is important to generate the foot traffic necessary for a natural peopling of spaces, as well as the close adjacency of a particular facility, urban amenity, or public transport infrastructure.

Regardless of this variation, some features must be understood as essential. This is, most likely, one of the greatest conclusions of this study. Comfort is indeed essential to the success of a space, otherwise users will tend to stay the minimum amount of time possible. Although informal seating is common presence in all of the assessed spaces, the recent architectural language in Porto has often left formal seating outside its plans, creating a dependency on outdoor catering outlets to provide for it. This is a strategy with severe consequences, as the provision of formal seating is understood, and indeed verified, particularly through PEM's 'human connection' dimension, as essential to attract users and keep them for some time, avoiding the creation of a movement-only space.

From the assessed spaces, with a special regard to Porto, the provision of climatic comfort conditions was not explored as thoroughly as expected, being often the result of aesthetic decisions. Protection from the sun and excessive heat, for example, was often treated with the use of trees, designed mainly to increase visual quality, and therefore not always adequate to the task in hand. Although it is not expected that a space has a consistent use throughout a day, nighttime safety is often a concern of public space users, addressable through an adequately designed lighting scheme. By being a reflex of the management's approach towards the quality of the space, and often being an indicative of physical degradation, it affects publicness strongly than expected. To avoid unintended physical degradation, materials and features should always be suited to the available financial and human resources, and feasible maintenance routines. Although without good urban design, a public space will most likely not work, other physical features and amenities, promoting a sense of safety, comfort and enjoyment must be suited in accordance with the space's geographic context. This includes, obviously, the concerns for inclusive design, in accordance to each country's legislation and regulations.

However, there are other reasons explaining why some spaces are used more and for longer periods. Although the presence of street cafés will, indirectly, increase a space's usage even if the remaining sections of the space do not present adequate comfort conditions, it is the provision of 'things to do' that is seen as essential to keep users in the space. Even in the most heavily used spaces, which often comprise a strong component of pure pedestrian traffic, the risk of creating a simple passage increases when there is nothing to keep these pedestrians from continuing their journey. The promotion of the space's animation works only as a temporary measure, and should not be seen as a permanent solution to the enlivenment of space. If a space is successful, we will see not only denser use, but also a more diverse one. As a result, the 'urban life' dimension of the Publicness Evaluation Model, which combines more aspects to use dynamics than simply its use intensity, is a good indicator of a space's total publicness score.

It is often assumed that one of the most effective measures of responding to the needs of users is by enabling them in the space's design and management stage. Safety and comfort, two of the main concerns of users, are frequently included in the range of concerns of designers and management authorities. Its execution, however, occasionally often falls short of the users' expectations. Despite the best intentions, users have in fact little power in the processes of shaping and reshaping the urban

environment. This is a problem that begins early on in the project stage, although the weak public participation numbers also show that the public is mostly the one group to blame. Although some managers, particularly in privately owned locations, show their reluctance in the positive outcomes of public participation, the involvement of the public can be beneficial. For instance, public spaces in residential areas are expected to have a higher percentage of frequent visitors, being more suitable to benefit from a stronger intervention of the public in its design and daily management schemes. By increasing its social capital, users will most likely demonstrate a stronger level of connection with the space, as they feel their needs will be answered. However, the range of needs and expectations of the general public is vast, and as a result, some users might not value the same features as others do.

7.2. RECOMMENDATIONS

Due to the great variety of spaces that shape our cities, can a new classification system be helpful enough to study the impact of the different dynamics which have shaped their fate? Without the assessment of a space's publicness, its weaknesses can still be identified, but little could be said regarding areas of possible improvement. While some space features might have a greater influence on its publicness, there is a reciprocal relationship between the different components of this model. The Publicness Evaluation Model indicates not only a space's current level of publicness, but also identifies its unexplored potential, and where and how it is possible to improve. With this in consideration, embedding a new space with the correct publicness features might not be enough to define or predict its success, as the common publicness reduction from project to operation stages shows. Still, if 'everything goes as planned', meaning that no major changes take place, it is surely a step in the right direction.

In existing spaces, occasionally, small changes, either physical or operational, are the only required ones to improve its performance. Other spaces might suffer from severe design problems, meaning that large redesigns are the only possible path in order to establish proper vitality levels. In semi-public spaces, the legislation of civility, let it be through an addition to the gamut of prohibited uses or behaviours, change in operation schedules, or increased surveillance, is considerably easier to enact for its management authorities, and hence understood as more effective than physical changes.

How can this translate into the assessed spaces? Old Eldon Square's strong publicness record shows that small physical changes, combined with the opening of adjacent buildings' ground floor uses, were the only necessary changes to the creation of a successful space. Even though this space only opens to the rest of the city in one of its edges, the adjacent shopping centre that borders its remaining three edges creates the necessary pedestrian flows needed to its natural surveillance. Properly located and dimensioned seating locations, combined with the presence of street cafés provide the reasons to make users stay in this space, even though there are no frequent scheduled events or activities of any type. Similarly, Times Square is also on a busy pedestrian route and its street cafés attract a large number of users when the weather allows. However, some of its physical aspects, particularly in terms of weather protection and increased formal seating locations to cope with peak use periods, could be improved.

D. João I and Trindade Metro station Squares benefit from a good amount of public event promotion, particularly during summer months, essential to take advantage of these spaces' large central sections. During these periods, even if only for a few hours, these two work as successful public spaces. However, in the large majority of occasions, the lack of formal seating locations and other 'things to do' reduces their appeal for everyday use. In the particular case of Trindade station square, the increase in the number of attractors, namely ground floor commercial units and street cafés could finally take advantage of its rooftop garden, thereby justifying the premise of the initial project. As for D. João I square, the creation of ground floor cafés in the northern end of its central section can be the missing piece of the puzzle.

Cardosas and Lisboa squares have great potential, at least when looking to its project. As the study focused on a recent period of their operation, only time will tell if these spaces have what it takes to be important additions to the city's network of publicly used spaces. Waterloo Square's project followed a similar strategy as the one identified in Cardosas square. However, a few years into its operation, it is apparent that the lack of attraction points and formal seating induces pedestrians to choose a different route thereby ignoring this space. Also, certain aspects regarding its physical upkeep, result of management communication issues could increase the appeal of this space. A future revisit of these two spaces' publicness is therefore important to prove the suitability of the adopted strategies.

The Blue Carpet suffers from a distinct problem. Its overemphasis on design, which suffered from subsequent poor maintenance, has proved to be a failed strategy. Even though it is in a moderately important pedestrian route, and presents some formal seating locations, the lack of 'things to do' is severely penalizing. In the cases where adjacent residential use is stronger, as is the case with Waterloo and Cardosas square, the assessment of residents' opinion regarding possible changes could also contribute even further to strong publicness.

As the consideration of just eight case studies is clearly not enough to provide a clear picture of the contemporary city, the natural evolution of this study is the extension of the remit of analysis to a wider number of spaces in the city, evaluating areas outside the boundaries of city centres, with particular relevance to residential areas. Currently, zoning and functional use maps allow for the identification of space typologies. Squares and parks can be distinguished from shopping centres and other similar kinds of semi-public spaces. However, the creation of a publicness map of an entire city could count with the valuable contribution of these spaces to contemporary urban life and identify areas where a shortage of spaces does indeed exist. To better operationalize the Publicness Evaluation Model, the adoption of more advanced analysis techniques, such as the use of time-lapse cameras, placed in strategic locations across the assessed locations, would also contribute to an easier and richer data collection process. In addition, further research could be made towards the development of a thorough weighing system, creating possibilities for a closer match to each stakeholder's needs.

In the end, despite the attempts to destroy the true essence of public space, it is still safe to say that public space retains important functions to the operation of the city. Recently, we have seen a return to traditional forms of public space, situation that is clearly visible through a usage increase in some of our cities most important public spaces. Public spaces became the focus of new social events, let it be from art exhibitions, cultural performances, or street fairs, as this is particularly true in Porto. Public space is definitely not destined to disappear, it is just being reinvented, and the analysis of their publicness can guide this process.

8
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ANNEXES

A 1. GLOSSARY

Public space

Public space stems from the implementation of a physical dimension to the concept of 'public'. Therefore, and taking into consideration the definition of the term that gives its origin, public space means firstly the opposite from private space. Public space is traditionally differentiated from private space in terms of access rules, sources and nature of control over entry to a space, individual and collective behaviour, and rules of use. A mostly acknowledged definition regards it as a space useable by all, without restrictions. Being the result of an evolution of the society, it is strong related to the realm of acquaintances and strangers that characterize social living, although not being it.

Public realm

Represents all the spaces in the city which are not private, referring not only to outdoor but also to indoor places. Also, it is regarded as including all the dimensions that make part of the social life. This is then a more comprehensive term than the one of public space, making the human dimension of public space. It forms the grounds for social interaction, exchange, learning and personal development, forming the basis for citizenship and the maintenance of a civil society. Generally, it bridges public space and public sphere.

Public sphere

Created from the development of civil society, it consists of an abstract space where the ideals of freedom and democracy are executed. It encompasses the ideas, practices and rituals that shape the overall society. Therefore, it is acknowledged that several public spheres are shaped by different publics.

Public domain

Used mainly by the political community, the public domain is used to define its sphere of common concerns. Again, as the public sphere, the public domain appears as an abstract place. It in fact abridges all the issues associated, in different terms, with the public space, sphere and realm. As the population loses strength and a sense of civility, the public domain gets weakened.

Publicness

Composed of several interpretations, ranging from representing just the spaces' accessibility, defining spaces that are democratic by allowing free speech and debate, the ability to foster or house community, or simply a social necessity by representing one's right to use public space, publicness can be easily understood by the essential features and qualities that give a public space its specificity, and what can make a given space be in fact called a public space. It has to take into consideration the different disciplines that have a say in the study of public space in order to provide the most comprehensive definition.

A 2. USER SURVEY RESULTS

A 2.1. TRINDADE STATION SQUARE

USER SURVEY RESULTS - TRINDADE STATION SQUARE			10th July 10:00										10th July 11:30										10th July 14:00				
		User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Question nº	1	3	4	5	3	3	4	3	4	4	2	5	4	4	2	3	3	4	3	3	4	3	4	2	2	3
		2	1	2	1	2	2	1	1	1	2	2	1	1	1	1	1	1	2	1	2	1	1	1	2	1	2
		3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		4	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	2	3	3	1	1	3	2	3	3
		5	2	1	2	1	1	2	1	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2
		6	1	1	1	2	2	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	2	1	1	1	2
		7	2	1	1	2	2	1	1	2	1	1	2	4	1	1	1	2	2	4	2	2	1	1	1	2	1
		8	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	2	2	1	1
		9	1	2	2	1	2	2	1	2	2	1	2	1	1	1	1	1	2	1	2	1	2	2	2	1	2
		10	2	1	1	2	4	1	1	4	4	1	4	4	1	2	1	2	4	2	2	2	1	1	1	4	2
		11	1	1	2	2	2	2	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2
		12	2	1	2	1	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	1	2	1	2	2	2
		13	2	3	3	1	2	3	3	1	3	3	1	1	3	3	3	2	2	1	1	1	1	3	2	3	3
			10th July 14:00					10th July 15:00										11th July 09:30									
		User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	Question nº	1	4	3	3	3	3	3	4	3	4	3	5	4	3	2	2	4	3	3	4	4	3	4	3	3	3
		2	2	2	2	1	1	1	2	2	1	2	1	2	1	2	2	1	1	2	2	2	2	1	1	2	1
		3	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		4	1	3	3	1	1	3	2	1	1	2	1	1	1	2	2	1	2	2	1	1	2	1	3	2	3
		5	1	2	2	1	1	1	1	1	2	1	2	2	1	1	1	1	2	2	1	1	1	1	1	2	1
		6	1	1	2	1	1	1	1	1	1	2	2	1	2	2	2	1	2	2	1	1	2	1	2	2	2
		7	2	2	2	1	1	2	1	1	2	2	4	2	2	2	4	4	2	4	2	2	4	2	4	2	2
		8	1	2	2	1	1	1	1	1	1	1	2	1	2	1	1	1	2	2	1	1	1	2	1	1	1
		9	1	1	1	1	1	2	1	2	1	2	1	2	1	1	1	2	2	2	2	2	1	1	2	3	2
		10	2	1	1	1	2	4	1	1	2	2	2	4	1	4	4	2	4	4	1	1	4	2	2	4	4
		11	1	2	2	2	2	1	2	2	1	2	2	1	2	1	2	1	1	2	1	1	2	1	2	2	2
		12	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	2	2	2
		13	1	1	1	3	3	1	1	1	3	1	3	1	3	1	1	1	1	1	1	1	1	3	3	3	1

USER SURVEY RESULTS – TRINDADE STATION SQUARE	
User	**Commentary**
2	For the use it has, I think this is a comfortable space to be in
3	This space does not have a particular value to me, because previously there was the station here. If it disappeared, it wouldn't matter to me
3	I don't want to be involved because I'm too old for that
6	I wasn't surprised because, to be honest, I didn't even notice the space
8	This space could have some street cafés
11	I usually come here, to go to the metro and to get the newspaper
12	For me, this space does not have any particular value, it's just a passage space
17	It could have more chairs and benches
18	There are not enough trees, in Porto they have cutting a lot of them recently
18	This space is well maintained, taking into consideration other public space. The cleaning ladies do a good job
18	This space could have more stuff going on, especially at night
18 19	I'm here waiting for a friend
19	This space is not well maintained, the young people do not have any consideration for the space
23	I'm waiting for someone
24	This space is large and could be more full
27	This is a safe space, there are always police or security guards
27 28	I'm waiting for someone
36	This space did not surprised me, it was previously a station and now it is a station
37	I normally feel safe here. I know that at night there are here some less advisable groups, but if we don't mess with them, there is no problem
39	This space surprised me, it's very large and empty
40	This space could have more trees
40	This space could be more used, they could make some fairs, like they do in Galerias
41	This space is not comfortable, it should have more trees
43	If there was an online platform, I guess I would be willing to participate more
46	There should be more trees
46	I feel free in this space, because they do a lot of stuff here
47	I was surprised by this, it's a good looking space, by Souto Moura
47	I wouldn't like to be more involved, City Council does not let anyone do anything

A 2.2. D. JOÃO I SQUARE

USER SURVEY RESULTS – D JOÃO I SQUARE			10th July										10th July										10th July				
			10:30										13:00										15:00				
		User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Question nº	**1**	4	4	4	4	5	3	3	4	4	3	4	5	5	3	4	4	4	4	3	4	3	3	5	5	4
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		5	1	1	1	1	1	2	2	1	1	2	1	1	1	1	1	1	2	1	2	2	1	1	2	2	2
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		7	2	2	4	2	1	2	2	4	4	2	2	2	2	2	2	2	4	4	4	2	2	4	1	1	4
		8	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	2	1	2	1	1	1	2	1	2	2	1	1	1	2	1	2	2	1	2	3	2	2	1	1	2
		10	4	2	4	1	1	2	2	1	4	4	1	2	4	4	1	1	2	4	2	2	4	4	4	1	4
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		13	1	1	3	1	3	1	3	1	1	1	1	3	3	2	3	3	1	1	1	1	1	1	3	3	2
			10th July					10th July										11th July									
			15:00					17:00										10:30									
		User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	Question nº	**1**	3	3	3	4	4	4	2	2	3	5	4	3	3	4	4	4	3	5	4	5	5	4	4	3	4
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		3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		4	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	1	1	3	3	1	3	3	3
		5	1	1	1	1	1	2	1	2	2	1	2	1	1	2	1	2	2	1	1	2	2	2	2	1	1
		6	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	2	2	2	1	1	1	1	1
		7	2	2	4	2	2	4	4	4	2	4	2	4	4	2	2	2	2	2	4	2	2	4	2	2	4
		8	1	1	1	2	2	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1
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		10	2	2	2	4	4	4	4	4	2	4	4	4	4	4	4	4	4	2	1	2	4	4	4	4	4
		11	2	1	2	1	1	1	2	2	1	1	2	1	2	1	1	1	1	1	2	1	1	2	1	2	2
		12	2	2	2	2	2	1	2	2	1	1	2	2	2	2	2	2	1	1	2	1	1	1	2	2	2
		13	2	2	3	1	1	1	1	1	1	3	2	1	1	1	1	1	1	3	1	1	1	1	2	2	2

USER SURVEY RESULTS – D JOÃO I SQUARE	
User	**Commentary**
1	I'm waiting for the bus
2	I work next door
3	It could have again the fountain they took away
3	It could more often children playing sports, as they often have
4	I didn't like the fact they took away the fountain
5	I came to this place to go to the bank
8	This place surprised me, by the negative
8	I spent much time in this square when I was younger, so this is a valuable space to me
11	This is not a very comfortable place, as you can see, I'm sitting at the ledge of the bank
11	This is a valuable space for me, because of the theatre
12	This space surprised me, it was well done, with the parking below
12	This space does not have much value to me, it's just a passage site
14	I'm waiting for someone
15	They could clean this space more often
15 16	This space is well used, they do some events every now and then
16	This space has some value to me, I like the statues
17	I was surprised when they took away the fountain
18	It should have public toilets
18	They could do more events in this space
21	I don't like the space
22	It should have more trees
23	I feel comfortable, they couldn't change the space, because it's not that big
23	It could have some cafés, although they could only work for the Summer
23	This is a valuable space for me, as it is a central point in the city
24	This space is clean, as it is possible
24	This space is well used, they do some events every now and then
25	This is not a very comfortable space, sometimes it is used as a racetrack
25	This is a clean space, they clean it every day
26	I feel free is this space, as they often do academic traditions (praxe) here
27	At Christmas, this space surprised me
29	When this space had the fountain it was better. It would help to make it cooler in the Summer
31	This space is more or less maintained, there are worse space in the city
31	This is a valuable space for me, because of the events they often do here
32	I like this space, it is a quiet space to stay a bit and eat something
35	This is not a safe space, there is not enough police presence
35	There be more trees, like in other squares
37	Normally we come to other places in the city, but today we decided to come here
37	This space should have more trees
38	This space should have more didactic features, like art pieces
41	I liked the final result, with the stone pavement and all
44	At night it's not a very safe space, because of the nearby night clubs
44	There are no toilets in this space, people have to go to the cafés
44	They do the events here and don't clean afterwards
44	I didn't like the final result. Despite the fact that when the fountain was were sometimes people urinated into it
45	There could be some shops in here
46	There could be some cafés for the tourists
47	I was disappointed with the space, as well, for example, with Aliados
47	This is a valuable space for me, it's part of my city

A 2.3. CARDOSAS SQUARE

USER SURVEY RESULTS – CARDOSAS SQUARE			16th July										16th July										16th July				
			09:30										10:30										11:00				
		User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Question nº	1	4	4	3	3	5	4	4	5	5	4	5	5	4	5	5	5	5	3	3	3	4	4	4	3	5
		2	1	2	1	1	2	1	2	2	2	2	2	2	1	1	2	2	1	2	2	2	2	2	1	2	1
		3	1	1	2	1	1	2	1	2	2	2	2	2	1	1	1	1	1	1	2	1	1	2	1	1	2
		4	3	3	3	3	3	3	3	1	1	3	3	3	1	3	2	2	3	3	1	3	3	1	3	3	3
		5	1	1	2	2	2	2	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	3
		6	1	1	1	2	1	1	1	1	1	2	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1
		7	1	1	1	4	4	1	4	2	1	4	1	4	4	4	4	1	1	1	1	1	1	1	4	2	1
		8	2	2	2	1	1	1	1	2	2	2	1	2	2	1	2	2	1	1	1	1	1	1	1	1	2
		9	2	1	1	1	1	1	2	1	1	1	1	1	3	2	1	1	1	1	1	1	1	1	1	2	2
		10	2	2	4	2	1	1	2	4	4	4	1	4	2	4	4	4	4	1	4	2	2	4	1	4	2
		11	1	1	1	1	1	1	1	2	2	1	1	2	1	1	1	1	2	2	1	1	1	1	1	1	1
		12	2	2	2	2	2	2	2	2	2	1	2	1	2	2	1	1	2	2	1	2	1	2	1	2	2
		13	1	1	1	2	3	2	1	3	3	1	3	3	1	1	3	1	2	2	1	2	1	1	1	2	3
			16th July					16th July										16th July									
			11:00					13:00										14:00									
		User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	Question nº	1	4	4	5	4	5	3	3	4	4	5	4	4	3	4	4	3	3	3	4	4	4	4	4	4	4
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		8	1	1	1	2	2	1	1	2	2	1	2	2	3	2	2	2	2	1	2	2	1	2	1	1	1
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		11	1	1	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	2
		12	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1	1	1
		13	1	2	1	2	2	1	1	3	3	1	3	3	1	1	3	1	1	2	1	1	1	1	1	1	1

USER SURVEY RESULTS – CARDOSAS SQUARE	
User	**Commentary**
4	This space surprised me, it's a modern space in the middle of an ancient city
5	People can pass through ir freely, so I think this is a public space
5	I came through this space to cut my way through
5	I think there is not enough space for people to be in
5	Taking into consideration that this space is under construction, I think this space is clean
5	I was shocked by this space
5	I accept what they've done, so I'm not interested in participating in the management
8; 9	I pass through here regularly, because I have a space in the parking lot
8	This space could have, for instance, a café, despite the fact that there is not much space to begin with
10	This space could be more used, it could have cafés and art exhibitions
10	It is an historic space inside the city, so this space is valuable to me
12	This space could be used differently, but I think that when it is completed, it will be more used
12	I don't like this space
12	I lived here all my life, so this space has a special value to me
13	This space does not have any value to me, construction works seem to never end
14	I feel safe here only in certain occasions, but nowadays you can't be really safe anywhere
15 16	I feel safe here only in certain occasions, there are time where you're better of at home
15	This space could have more trees
15	This space has a special value to me. Before it was falling apart, and now it's all nice and neat
16	This space is comfortable, there isn't any more space to put more things
18	I feel free, although when people start to live here, I think it won't be the same
19	I came here to show this space to my friend
20	This space could be more used, there could be more stuff happening
22	I work here, so I'm here everyday
23	I like to come here to see the evolution of the construction works
24	I was surprised by the buildings
25	This space could be more used, although it's mostly used as a passage space
26	There could be more garden areas
28	It only has one space to lean over. The rest are only steps
28	This is a valuable space to me, I like everything about this city
30	This space could be more used, it could have more things going on
30	I would like to be more interested in other spaces, there is always room to improve
36	I usually come to this space on a regular basis to show it to people
36	Taking into consideration the current condition of the space, I think it's well used
36	To be honest with you, I don't feel capable of being more active, I feel that I don't have the knowledge for that
38 39	I don't feel safe here. Maybe when there are cafés it will be safer.
38	I think this space needs more trees. In general, Porto needs them as well.
38	I don't feel free here. When residents will be here, it would be even more difficult
39	It could have more trees and flowers
41	I came here because of 'Casa da Guitarra'
41	As this is kind of an enclosed space, it might not so safe at night
41	It doesn't have any benches, it should have
41	It could have cafés
46 47	I came here to see the evolution of this space
49 49	I usually come here to see the evolution of the space
48	At the moment, there are not enough places for people to sit
48	I think this space could be cleaner, although I think that in the future it will be
48	I think this space could be more used, although in future it might be
48	This space is valuable to me, I helped to build it
50	This is a space in the centre of the city, obviously it is an important space

A 2.4. LISBOA SQUARE

USER SURVEY RESULTS – LISBOA SQUARE			7th October										7th October										7th October				
			09:30										10:30										11:00				
		User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Question nº	**1**	3	4	4	5	4	3	3	5	5	3	4	4	5	5	4	4	4	4	4	4	4	4	3	4	4
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		9	1	1	1	1	1	1	1	1	2	1	1	2	1	1	2	2	1	1	1	1	1	2	1	1	1
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		13	1	2	2	3	1	3	3	2	2	1	1	1	3	3	2	2	1	1	2	1	2	3	3	2	3
			7th October					7th October										7th October									
			11:00					13:00										14:00									
		User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	Question nº	**1**	3	3	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	3	3	4	3	5	5
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		8	2	1	1	1	1	2	2	2	2	2	3	3	1	2	1	2	1	1	1	1	1	1	1	2	2
		9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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		12	1	2	2	2	1	1	1	1	2	2	2	2	2	1	2	2	1	2	2	1	2	2	2	1	1
		13	1	3	3	2	1	2	1	2	3	3	1	1	2	1	3	2	1	1	1	1	1	3	1	1	1

USER SURVEY RESULTS – LISBOA SQUARE	
User	**Commentary**
1 2	We are visiting the city
4	We live close by, so we use this space everyday
4	I think it's important for us to participate
5	Its a public space but not for everyone. It's only for those with money
5	It has security guards, so you are restricted on what you can do
5	It could have more spaces for children and the elderly
5	This is a valuable space for me. It had many uses. I remember this being a market and coming here with my mother
8	We came to see the tower and the library
9	This space could be better maintained. There are some stains on the concrete and the glass is dirty
10	I come to this space every day because I work here
11	I work here
12	I would say this is a public space, but with so many stores, I believe it could not be fully public
12	There are some dirty windows
13	There are spaces to sit, but in the cafés, paying
13	There are some restrictions on what you can do, and I like it that way
15	We came to the café
17	There are certain things you can't do here, obviously
17	I think this is a valuable space, for its location
21 22	We came to see the shops
21 22	This space surprised me, it became very nice
21	For me this space is a special site
22	This space could have other types of stores
22	This space is normally clean, but today the windows are dirty
24	There are not enough places to sit, I'm sitting on the steps
25	I usually come to this space to go to the café (Costa)
25	This space surprised me, is a lot better than the rubbish it used to be
30	There are not enough places to sit, they should open the garden and puts some benches there and a café
30	This space could be used differently. There should be more shops selling Portuguese products, because of the tourists
30	This is a symbolic space to me, because of the olive trees
30	I'm a tour guide and I've talked to the owners of this space to give them suggestions, so in a way I've been involved
31	It's a semi-public because you're not allowed on the garden
32 33	There are no bathrooms
33	I was surprised by this space, it's very pretty. For me, this is the spot in the city currently
34	This is a safe space, I think. To be honest, it was only today that I noticed that there is a security guard here
35	They spent millions in this project, but it ended up nice
36 37	We usually come here for leisure purposes, to go to the shops, to have coffee, etc.
38	There should be some benches
38	I didn't notice that there was some sort of restriction on uses
39	I work here, so I come here everyday
41	I mean, I'm interested and at the same time I'm not
42	I only come here during the day, but I assume that it's also safe during the night
42	I was surprised by this space, I quite enjoy what they've done with the olive trees on the roof
44	There should be more stuff happening. The other day there were some kids playing music, it was interesting
45 46	There are benches missing. We are taking our coffee standing up

A 2.5. TIMES SQUARE

USER SURVEY RESULTS – TIMES SQUARE			31st May										31st May										31st May				
			09:30										11:00										12:00				
		User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Question nº	**1**	4	3	3	3	3	3	5	5	4	4	4	4	4	4	4	4	5	3	3	3	4	4	4	4	4
		2	1	2	1	1	1	2	1	2	2	2	2	1	1	2	1	2	2	1	2	2	2	1	1	2	2
		3	1	2	2	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		4	2	1	3	3	2	3	3	3	3	3	3	2	3	3	3	3	3	3	3	1	3	3	3	3	1
		5	2	1	2	2	1	1	2	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1
		6	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2
		7	3	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	4	1	1	1	2	2	2	2
		8	2	2	2	2	1	1	1	1	2	2	1	1	1	1	1	1	2	1	1	1	2	1	2	2	1
		9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
		10	2	1	2	4	2	1	4	4	4	2	4	4	1	2	1	2	4	4	2	1	1	4	4	4	2
		11	1	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	1	1	2	2	1	2	2	2
		12	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1
		13	1	3	1	1	1	1	1	2	3	2	2	1	3	2	3	3	2	2	2	3	3	3	2	2	1
			31st May					31st May										31st May									
			12:00					13:00										17:00									
		User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	Question nº	**1**	4	4	4	4	3	4	4	3	4	3	3	3	3	3	4	4	4	4	4	3	3	4	4	5	4
		2	2	2	1	2	2	1	2	2	2	2	2	1	1	2	2	1	2	2	2	2	1	1	2	1	1
		3	1	1	1	1	1	2	2	1	1	1	2	1	1	2	2	1	1	1	1	1	2	2	2	1	1
		4	1	1	1	1	3	3	3	1	1	1	1	1	1	2	2	3	3	3	1	2	2	3	3	3	3
		5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	2	2	2	1
		6	2	2	2	2	1	1	1	1	2	2	2	1	1	2	2	1	1	1	2	1	1	1	1	1	1
		7	2	2	4	2	1	1	1	2	2	4	1	2	2	1	1	1	1	4	1	1	2	1	2	1	1
		8	1	2	2	2	1	1	1	1	1	1	1	2	2	1	1	2	2	2	1	1	1	1	2	1	1
		9	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1
		10	2	1	1	1	1	4	4	1	2	4	2	1	1	4	4	2	2	2	1	1	1	4	4	1	1
		11	2	1	1	1	2	2	2	2	2	2	2	2	2	1	2	1	1	2	2	2	1	2	2	1	2
		12	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	1	2
		13	1	1	1	1	3	1	1	1	2	2	2	2	3	2	2	3	3	2	1	3	2	3	3	1	3

USER SURVEY RESULTS – TIMES SQUARE	
User	**Commentary**
1	The CCTV camera is always facing the wrong direction
2	I work right next to this space
2	I don't feel free as there are always people watching
2	This space is properly used as sometimes they make events in the top part
6	This space has a special value because of the science museum
8	This space surprised me because it is very empty
9	This space could be used differently because at night time it is very different
12	This space is properly maintained as there was a guy trimming the trees a while ago
15 16	We're not from here, we've just arrived
15 16	We're having a snack
17	I'm just sitting here before going to the Life Centre
18	The Life Centre building surprised me
20	I use this space every day because I work here
24	If there was more stuff to do, I think it would be more interesting
24 25	Well, with the pubs I don’t know if it would feel safer at night
25	This part (north edge) could do with a little more cleaning
26	For me, this is a valuable space because it's the largest public space in the city
27	I don't feel safe because of the pubs
27	I value this space because it's the only one like this
28	This space could be better if it had more trees and flowers
30	Yes, I'm using this space as I'm sitting for a bit now
30	I value this space because it's the largest public space in the city
31	For example, they could put tables here
37	Well, there are some restrictions as you can't smoke near the entrance to the building
37 38	It's well used, because if there were more people, then we wouldn't be able to work
39	This space has some value to me, because it's where I work
39 40	I use this space when the weather is good
40	This space did surprised me, I quite like it

A 2.6. WATERLOO SQUARE

USER SURVEY RESULTS – WATERLOO SQUARE			31st May										31st May										31st May				
			09:00										10:00										11:30				
		User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Question nº	**1**	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	3	4	4	4	4	3	4	3
		2	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	2	2	1	2	2	1	1	1	1	2
		3	2	2	1	2	1	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	1	2	2	1
		4	1	1	3	3	2	3	3	2	1	3	1	1	2	3	2	2	3	3	2	3	3	3	1	1	1
		5	1	2	1	2	1	2	2	1	2	2	1	1	2	2	2	2	2	2	1	2	2	2	1	1	1
		6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1
		7	2	1	2	2	2	2	2	2	2	2	2	4	2	2	2	1	2	1	1	1	2	2	2	2	2
		8	2	1	1	3	1	1	1	1	2	2	1	1	1	1	2	1	2	1	1	2	2	2	2	1	2
		9	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	1
		10	1	2	2	4	2	4	2	2	2	2	1	4	1	2	2	4	4	2	1	2	2	2	1	2	1
		11	1	1	1	1	2	2	1	2	2	2	2	2	2	2	2	1	2	2	2	2	1	2	2	2	2
		12	2	1	1	1	2	2	2	2	2	2	1	1	2	2	2	1	2	2	2	2	2	2	2	2	2
		13	3	1	1	2	1	1	2	3	3	3	2	2	3	3	3	3	1	3	3	2	1	2	1	2	1
			31st May					31st May										31st May									
			11:30					12:30										16:30									
		User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	Question nº	**1**	3	3	4	4	3	4	4	4	4	3	3	4	3	3	4	3	2	2	4	4	4	4	3	3	3
		2	1	2	1	2	2	1	2	1	1	2	1	2	1	2	2	1	1	1	2	2	1	2	1	1	2
		3	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	2	1
		4	3	3	3	2	1	1	3	2	1	2	3	2	1	1	3	3	3	3	3	3	3	3	3	3	3
		5	2	2	2	2	2	1	2	2	1	2	2	2	2	1	2	2	1	1	1	1	2	2	2	2	2
		6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
		7	2	2	2	1	2	2	2	1	1	2	1	1	4	2	2	2	1	1	2	2	2	1	2	2	2
		8	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2
		9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		10	2	2	4	4	2	1	4	2	2	2	1	1	4	2	2	2	1	1	4	4	2	2	4	4	2
		11	2	2	2	1	2	1	2	2	1	2	2	1	2	2	1	2	2	2	1	1	1	2	1	1	2
		12	2	2	2	2	2	2	2	2	1	2	2	1	2	2	2	2	2	2	1	1	2	2	2	2	2
		13	1	3	1	2	3	2	3	2	1	3	3	1	1	2	1	2	3	3	2	2	3	2	1	1	1

USER SURVEY RESULTS – WATERLOO SQUARE	
User	**Commentary**
1	I'm sitting in this space as I'm waiting for my shift to start at the restaurant
1	This is space is mainly used as a thoroughfare, so it's use is ok
1	Yes, this space is clean, they sprayed it on the other day
3	I value this space, it's nice to have a space like this
8	I'm waiting for someone in this space
9	I use this space as it's on my way to work
9	I feel safe in this space except for match days
11 12	We're using this space as we're taking topographic measurements
11	I value this space, because it's better than having some buildings
12	This space could do with some more grass
12	Sometimes, this space is well maintained, but they could do the bushes more often
16	I only feel safe during the day as in early morning, this space feels quite empty
17 18	We're just visiting
17	There are no places to rest, but it could have more trees and plants as well
19	I work nearby so I use this space often
19	I'm just having a break here
22	I don’t feel very comfortable, because, as you can see I'm sitting on the bollards
23	It's semi-public as it is a car park
23	I'm sitting on the steps, so it's not a very comfortable space
27	I feel safe as there is the car park nearby
27	If I could put a paper with suggestions in a ballot, ok, but only in that case
28	I feel free to some degree because there might be a lot of people looking from the buildings
28	It's quite an empty space, there should be more things going on
28	It's not a valuable space. Most people don't even know it exists
29	I pass through this space because it's more pleasant than going through the other street
31	I work nearby, so I use this space everyday
34	Playing sports, using bollards
35	There is nothing to do around here
38	There should be more things to do here, to attract people
38	This space could have more cafés and performances/events
39	I'm having a break from work
41	I'm using this space as I'm waiting for someone
41	I don’t feel comfortable because I'm sitting on the bollards
42 43	We're using this space to skateboard
44	This space is not very comfortable, I had to sit on the steps
44	This space surprised me, I quite liked the bollards, I even took pictures to them
45	This space could be better if it was more used, or had more grass
45	This space surprised me, there are some nice lights at night
47	Yes, I would be interested to be more involved, but just to give my opinion
48	Yes, I feel safe in the space, I quite like it
48	I usually feel safe wherever I go
49	When this space was new it surprised me
50	I feel safe within reason, because of the apartment buildings
50	I think this space could be more used, although on the weekends it might be

A 2.7. OLD ELDON SQUARE

USER SURVEY RESULTS – OLD ELDON SQUARE

Question nº		28th May 13h30										28th May 14h00										28th May 15h00				
	User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1		5	5	4	4	3	3	2	2	5	3	4	5	5	2	2	3	4	4	4	4	3	4	3	3	3
2		1	2	2	1	1	2	2	2	1	1	2	2	1	2	2	1	1	2	2	1	2	1	1	2	1
3		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4		3	3	3	3	3	3	3	3	2	2	2	2	3	2	2	2	3	3	3	2	2	2	2	2	2
5		2	2	2	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	2	2	1	2	1	2
6		1	2	2	2	1	1	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2
7		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
8		1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
9		1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2
10		1	4	4	1	1	1	1	1	1	1	1	1	3	1	1	1	4	1	4	1	1	1	1	1	4
11		2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	1	1	2	2	1	2	1	2
12		2	2	2	1	2	2	2	2	2	2	1	1	2	1	1	1	1	1	1	2	2	2	1	1	1
13		3	1	1	2	1	1	1	1	1	1	3	3	2	2	2	3	1	1	1	2	1	1	1	1	1

Question nº		28th May 15h00					28th May 15h30										28th May 16h15									
	User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
1		3	5	5	5	5	4	4	3	3	4	2	2	2	3	3	3	3	4	4	4	4	4	2	2	4
2		2	2	2	2	2	2	2	1	1	2	2	1	1	1	2	1	2	1	1	1	2	2	1	2	1
3		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4		2	3	3	3	3	2	2	3	3	3	2	2	3	3	3	3	3	1	3	1	1	3	3	3	1
5		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1
6		2	2	1	1	1	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8		1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	2
9		2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	1	1	1
10		4	1	1	1	1	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11		2	1	2	1	1	2	2	1	1	2	2	2	2	2	2	2	2	1	2	2	2	2	1	2	1
12		2	1	1	1	1	2	2	1	1	1	2	2	2	2	2	2	2	1	2	2	2	2	2	2	1
13		1	1	1	3	3	2	2	2	2	1	3	2	3	1	3	3	3	1	3	3	3	1	1	1	1

USER SURVEY RESULTS – OLD ELDON SQUARE	
User	**Commentary**
2	It's a space to be relaxed when going to the shops
2	The seating is odd
4	It's just a space to be relaxed in
5	I use this space based on the weather
7	I was surprised because this is a big space
8	It's a new space, isn't it?
10	It's the only green space in the middle of the city
11	It's a green space, so it has a strong value
14	Because of the war memorial
16	I feel safe anywhere
16	I'm in this space because I'm waiting for some family members
16	This space did not surprised me because I lived here all my life
17	This space should have more used, such as live music
18	This space surprised me because it's a good space for kids to play in
19	This space should have more tables and chairs
19	This space surprised me after the refurbishment
22	We're in this space as we're deciding what to do
23	I like the chairs, I can sit on them, so this is space is comfortable
24	I think this space is used by the wrong people
24	The war memorial gives this space a special value
27	For the number of people using this space, it is well maintained
27	There should be a separate space in the city for the youngsters, like a skate park
27	The railings at the war memorial surprised me, they weren't there
28	I like to give suggestions, so I'm interested in being more involved
29 30	I'm in this space because I'm having a break from the shopping
30	It's OK, considering how many people are using it
30	I liked when they changed the space
31	I feel safe sometimes, depends on the use
31	I feel free to some degree, depend on who's using the space
31	I'm used to the space, so it didn’t surprised me
32	I'm waiting for friends
33 34	I'm in this space having a snack before catching the bus
35	I value this space because it's nice to have a space like this in the centre
37	Just chilling
39	I'm just relaxing in this space
41	I'm using this space, just relaxing
41	The edges are not as good as they should be
43	I feel free to some degree, Eldon Square should just be the War Memorial
43	They are always cleaning the space
50	I feel free to some degree, Eldon Square should just be the War Memorial

A 2.8. BLUE CARPET

USER SURVEY RESULTS – BLUE CARPET			16th May										16th May										16th May				
			10:00										10:30										12:00				
		User	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	Question nº	**1**	4	4	4	4	2	4	4	4	4	4	3	5	3	3	4	5	4	3	4	4	4	3	4	4	4
		2	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	2	1	2	2	2	1	1	2	2	1
		3	1	1	1	1	2	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
		4	1	1	2	2	2	1	3	3	1	3	3	1	2	2	2	3	1	2	1	2	2	2	3	1	3
		5	1	1	1	2	2	2	2	2	2	2	1	2	2	2	1	2	2	2	2	2	2	2	2	1	1
		6	1	1	1	1	1	2	1	1	1	1	1	1	2	2	1	2	1	1	3	1	1	1	1	1	2
		7	1	1	1	1	1	2	2	2	1	2	1	2	1	1	1	1	1	1	2	2	1	1	2	2	1
		8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	1	1	1	3	3	1	1	1	1	1	1	3	1	1	1	1	3	1	3	1	1	3	1	3	1
		10	2	2	1	2	2	2	2	2	2	2	1	4	4	4	2	1	1	1	4	4	1	2	4	2	1
		11	1	1	2	1	1	2	2	2	1	2	2	2	1	1	1	1	1	2	2	2	2	1	2	2	2
		12	1	1	2	1	1	2	1	1	2	1	1	1	1	1	1	1	2	1	2	2	2	1	1	2	2
		13	1	1	1	3	3	1	1	1	3	3	3	3	3	3	1	3	1	1	3	1	3	1	1	3	3
			16th May					16th May										16th May									
			12:00					15:00										16:00									
		User	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
	Question nº	**1**	5	4	4	3	3	4	4	3	3	3	3	4	4	4	4	4	4	4	4	3	3	3	4	4	3
		2	1	2	2	2	2	1	2	1	2	1	2	1	1	1	2	2	1	2	2	1	1	2	1	1	2
		3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		4	3	3	3	2	2	3	3	1	1	1	1	2	2	3	3	2	2	2	3	2	3	3	1	2	2
		5	2	2	2	1	1	1	1	2	1	1	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2
		6	1	1	2	1	2	2	2	1	2	2	1	2	1	1	1	2	1	2	2	1	2	2	1	1	1
		7	1	1	1	1	2	1	4	1	1	1	1	2	1	2	2	4	2	4	4	1	1	4	1	1	4
		8	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1
		9	1	1	1	1	1	3	3	3	2	1	1	1	1	1	1	2	1	3	3	1	1	1	2	3	3
		10	1	1	1	1	4	2	1	2	1	2	2	4	2	2	4	2	1	2	2	2	2	4	1	1	4
		11	2	2	1	2	2	2	2	2	2	1	2	1	2	1	1	2	1	2	1	2	2	1	2	1	2
		12	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	1	2	1	2	2	2	2	2	2
		13	2	1	3	1	3	1	1	3	1	1	3	1	1	1	1	3	1	1	1	2	1	3	1	3	2

USER SURVEY RESULTS – BLUE CARPET	
User	**Commentary**
12	There are no places to rest and the space is slippery when wet
13 14	I don't feel safe at Night because of the drunk people that come from Liquid
19	Skateboarders make this space unsafe
20	I liked the buildings
23	Well, I just arrived at Newcastle
25	It wouldn't be an open space if it was more used
32	This space should have more flowers and gardens
34	Well, there are signs restricting some behaviours
34	yes, I would like to be more involved. Once there was an event with fire breathers. I liked it.
34	I was surprised by the buildings
37	This space could have more tables and chairs
37	This space surprised me. In the winter it looks like an ice rink
39	I liked the buildings
40	I was impressed by the benches and the bollards
42	This space could have more greenery
45	I'm waiting for someone

A 3. SPACE USE PATTERNS

A 3.1. TRINDADE STATION SQUARE

PEDESTRIAN TRAFFIC - TRINDADE STATION SQUARE																			
			MALE					FEMALE					TOTAL by path (*)						
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7
WEEK	COLD	**A**	1	4	20	16	8	1	8	12	27	3	24	5	61	4	0	0	6
		B	1	1	19	28	8	0	0	14	28	8	44	3	54	9	0	0	4
		C	0	35	17	15	3	0	35	14	15	4	56	3	62	16	0	5	4
		D	1	12	27	30	3	1	9	27	33	2	61	2	70	7	4	3	1
		E	2	3	33	66	22	2	3	26	68	18	85	7	124	14	4	18	3
		F	0	9	21	25	2	0	8	29	20	2	57	1	61	7	0	4	3
		G	0	2	15	4	0	0	3	10	2	1	21	0	20	0	0	0	0
		A	0	6	39	60	25	0	7	31	45	20	95	0	105	18	0	12	3
		B	1	27	33	54	10	0	30	32	50	12	107	3	108	27	0	15	8
		C	2	33	19	23	16	3	42	21	22	16	73	3	105	15	10	1	1
		D	1	16	20	48	16	1	18	30	42	16	92	11	96	17	0	9	7
		E	2	8	59	37	9	1	9	60	44	8	71	2	121	46	0	3	4
		F	1	12	24	26	3	0	8	30	23	2	54	6	65	11	1	4	2
		G	1	6	16	8	0	0	5	12	5	0	23	0	28	2	0	3	0
	RAIN	**A**	0	2	20	40	11	0	5	20	50	12	47	5	97	1	11	2	3
		B	0	4	13	10	3	0	4	20	12	3	25	1	39	7	0	5	3
		C	0	0	27	23	5	0	0	29	40	2	49	1	67	9	0	6	0
		D	0	3	30	20	5	2	4	44	24	7	57	3	75	5	3	4	5
		E	1	7	20	31	6	0	13	16	35	3	48	6	69	17	1	8	3
		F	0	6	54	30	5	0	7	55	30	10	72	0	111	0	15	0	2
		G	0	0	10	5	0	0	0	7	4	0	12	0	18	0	0	0	0
		A	0	15	35	23	13	0	17	36	29	13	81	6	59	15	5	25	3
		B	2	1	23	41	10	1	0	16	45	14	56	2	54	16	5	22	6
		C	0	27	30	21	11	2	36	38	22	8	75	6	56	34	9	14	9
		D	3	33	15	20	12	1	40	20	17	18	77	2	65	4	15	4	8
		E	0	33	18	18	10	0	32	23	13	8	68	1	75	0	14	4	3
		F	4	5	45	26	9	6	6	55	20	10	20	10	88	16	30	12	8
		G	0	3	13	15	3	0	1	15	5	1	15	0	20	14	0	7	0
	SUMMER	**A**	3	20	25	55	40	2	25	30	48	30	137	0	93	33	0	30	3
		B	2	7	40	60	10	3	6	50	75	7	66	0	120	37	0	45	5
		C	2	15	35	50	5	1	15	30	45	5	50	10	76	25	0	20	13
		D	3	28	50	20	5	2	20	35	25	2	61	5	68	22	0	25	10
		E	0	3	52	42	4	0	3	35	33	2	56	0	87	21	0	10	0
		F	2	25	25	28	2	1	20	20	20	1	45	0	80	20	0	10	4
		G	0	2	11	8	0	0	1	14	4	0	13	0	21	18	0	2	0
		A	0	5	64	60	4	0	6	60	62	0	84	3	130	26	0	15	14
		B	0	10	30	30	20	0	7	25	25	10	49	0	86	15	0	19	1
		C	2	15	30	35	1	1	20	31	35	0	48	0	79	24	0	27	2
		D	6	12	40	25	4	2	10	45	20	3	65	2	75	17	4	20	1
		E	3	25	24	25	12	2	19	25	28	11	69	2	82	20	4	14	10
		F	1	30	45	40	2	1	30	38	35	2	75	0	122	22	7	30	2
		G	0	22	28	22	1	2	18	23	18	0	40	6	62	10	0	27	2

(*) includes static use that follows a given pedestrian path

USE PATTERNS - TRINDADE STATION SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEK	COLD	**A**	1	1	0	0	0	0	0	2	2	0	0	0	0	0
		B	2	8	0	0	0	0	1	2	2,88	0	0	0	0	4
		C	0	5	3	0	1	0	3	0	5	2	0	10	0	2
		D	0	6	8	0	0	0	2	0	7,67	7,38	0	0	0	3
		E	1	68	15	0	0	0	1	10	3,93	8,87	0	0	0	2
		F	1	11	6	0	0	0	1	4	4,73	6	0	0	0	2
		G	0	6	2	0	0	0	0	0	6	10	0	0	0	0
		A	0	18	21	0	0	0	0	0	6,26	9,38	0	0	0	0
		B	0	17	15	0	1	0	0	0	5,24	7,13	0	6	0	0
		C	13	10	7	0	0	0	1	3,38	4,2	7,86	0	0	0	4
		D	1	25	11	0	0	3	0	0	4,04	5,55	0	0	10	0
		E	0	15	7	0	0	0	0	0	8,4	9,14	0	0	0	0
		F	0	12	3	0	0	0	0	0	4,5	5	0	0	0	0
		G	0	4	2	0	0	0	0	0	4	10	0	0	0	0
	RAIN	**A**	0	1	2	0	0	0	0	0	3	4	0	0	0	0
		B	0	6	5	0	0	0	0	0	4,33	4	0	0	0	0
		C	0	6	3	0	0	0	0	0	4,33	10	0	0	0	0
		D	2	15	6	0	0	0	0	1	4,33	5	0	0	0	0
		E	0	47	2	0	0	0	1	0	3,42	5	0	0	0	5
		F	0	12	2	0	0	0	0	0	5	10	0	0	0	0
		G	0	3	2	0	0	0	0	0	6	6	0	0	0	0
		A	0	10	6	0	0	0	0	0	2,8	5	0	0	0	0
		B	0	10	1	0	0	0	0	0	6	3	0	0	0	0
		C	1	8	4	0	0	0	0	10	3	10	0	0	0	0
		D	0	15	3	0	0	2	0	0	5,4	10	0	0	3	0
		E	0	13	4	0	0	0	2	0	5,69	10	0	0	0	5
		F	0	6	13	0	0	0	1	0	6,33	5,77	0	0	0	3
		G	0	5	2	0	0	0	0	0	2	5	0	0	0	0
	SUMMER	**A**	0	17	12	0	0	0	0	0	4,11	6,5	0	0	0	0
		B	0	12	8	0	0	0	0	0	2,17	4,88	0	0	0	0
		C	0	15	4	0	0	3	0	0	3,6	10	0	0	10	0
		D	0	18	3	0	0	0	0	0	3,33	8,33	0	0	0	0
		E	3	11	7	0	0	0	0	7,33	6,64	7,43	0	0	0	0
		F	0	7	30	0	0	0	0	0	10	7,5	0	0	0	0
		G	1	11	8	0	2	0	1	2	10	3,75	0	6	0	10
		A	2	4	9	0	0	0	2	2	1	6,67	0	0	0	7
		B	0	11	2	0	0	0	0	0	2,37	6	0	0	0	0
		C	2	8	12	0	0	0	0	1	4,63	8,33	0	0	0	0
		D	0	23	6	0	0	0	0	0	5,56	9,17	0	0	0	0
		E	0	18	14	0	0	0	5	0	3,39	5,79	0	0	0	3
		F	0	24	12	0	0	0	0	0	4,46	7	0	0	0	0
		G	0	11	6	0	0	0	0	0	5	6,17	0	0	0	0

NUMBER OF USERS - TRINDADE STATION SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE					RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEK	COLD	**A**	2	0	0	0	2	0	0	0	0	0	0	98	4	0	0
		B	11	1	0	1	4	1	0	0	1	2	0	104	4	0	0
		C	12	0	1	3	3	2	0	0	1	2	0	133	17	0	0
		D	16	0	2	6	4	1	0	0	1	2	0	156	5	0	0
		E	85	2	4	9	19	6	1	6	10	20	8	320	8	0	0
		F	19	0	2	5	3	1	0	1	3	3	1	131	4	0	0
		G	8	0	1	4	2	0	0	1	0	0	0	45	0	0	0
		A	40	0	12	3	3	4	0	15	1	2	0	270	3	0	0
		B	33	1	10	5	3	1	1	10	2	0	0	275	5	2	0
		C	31	0	5	4	8	2	0	3	4	4	1	217	6	1	0
		D	40	0	6	10	7	2	0	5	5	4	1	231	8	1	0
		E	22	0	8	5	6	1	0	1	1	0	0	249	10	0	0
		F	15	0	2	7	4	0	0	0	1	1	0	141	3	0	0
		G	6	0	2	1	3	0	0	0	0	0	0	56	3	0	0
	RAIN	**A**	3	0	0	2	1	0	0	0	0	0	0	157	6	0	0
		B	11	0	2	7	2	0	0	0	0	0	0	78	2	0	0
		C	9	0	0	3	4	0	0	0	0	2	0	132	3	0	0
		D	23	0	1	4	5	4	0	0	1	3	5	156	3	3	0
		E	50	0	1	1	21	4	0	0	0	20	3	174	1	0	7
		F	14	0	0	6	4	0	0	0	3	1	0	197	2	3	0
		G	5	0	0	4	1	0	0	0	0	0	0	29	0	2	0
		A	16	0	4	5	3	0	0	0	2	2	0	194	3	0	0
		B	11	0	2	4	3	0	0	1	1	0	0	160	4	0	0
		C	13	0	4	4	4	0	0	0	0	1	0	193	12	3	0
		D	20	0	3	9	4	0	0	0	2	2	0	181	15	3	0
		E	19	0	2	4	6	1	0	0	2	4	0	171	3	0	0
		F	20	0	4	8	4	0	0	1	0	3	0	196	7	3	0
		G	7	0	1	3	2	0	0	0	1	0	0	60	3	0	0
	SUMMER	**A**	29	0	5	4	6	0	0	5	2	7	0	302	5	0	0
		B	20	0	4	4	6	1	0	1	2	2	0	277	3	0	0
		C	22	0	4	3	5	0	0	4	3	3	0	224	1	0	0
		D	21	0	3	3	4	1	0	3	5	2	0	211	0	0	0
		E	21	1	1	4	4	0	0	4	4	3	0	195	0	0	0
		F	37	0	13	5	5	0	0	7	4	3	0	174	5	2	0
		G	23	0	7	5	1	0	0	5	3	2	0	63	0	0	0
		A	17	0	1	6	1	0	0	1	7	1	0	277	1	0	0
		B	13	0	1	0	4	2	0	0	0	6	0	167	3	0	0
		C	22	0	6	2	5	0	0	6	0	3	0	188	3	1	0
		D	29	0	4	6	8	0	0	3	3	5	0	196	0	0	0
		E	37	0	3	11	4	0	0	4	12	3	0	211	0	0	0
		F	36	0	6	8	4	0	0	5	10	3	0	259	1	0	0
		G	17	0	5	5	4	0	0	0	2	1	0	151	0	0	0

PEDESTRIAN TRAFFIC - TRINDADE STATION SQUARE																				
			MALE					FEMALE					TOTAL by path (*)							
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7
WEEKEND	COLD	**A**	0	0	12	13	10	0	0	13	23	13	41	0	40	0	0	4	1
		B	1	2	12	23	16	0	1	12	26	18	55	2	51	1	0	0	3
		C	2	2	20	15	8	2	2	30	20	7	32	4	60	6	0	4	3
		D	0	1	20	10	6	0	2	20	12	3	21	3	39	11	0	3	1
		E	1	5	10	35	2	0	3	15	42	0	48	0	61	12	0	3	2
		F	0	2	12	25	3	0	1	10	12	2	30	2	34	5	0	3	1
		G	0	1	26	9	1	0	1	24	7	0	26	1	52	2	0	1	0
		A	0	0	3	6	3	0	0	0	0	2	8	0	9	0	0	2	0
		B	1	1	3	22	6	0	0	5	24	8	35	0	27	10	0	3	0
		C	0	0	10	21	10	0	0	10	19	10	30	2	40	7	0	5	2
		D	0	2	9	22	5	0	7	11	20	7	37	4	30	1	0	10	3
		E	3	4	13	37	7	2	8	10	33	6	55	3	52	17	0	5	4
		F	0	15	28	25	2	0	12	23	22	1	59	0	72	6	0	5	3
		G	1	3	28	11	2	1	4	38	8	2	37	0	63	4	0	2	0
	RAIN	**A**	1	0	4	12	1	0	0	1	8	3	11	0	15	1	5	0	0
		B	2	1	10	11	5	1	0	10	12	5	11	0	15	1	5	0	0
		C	0	7	5	11	3	0	0	2	10	5	13	1	24	0	8	1	1
		D	0	1	8	8	7	1	3	10	10	8	20	3	26	0	8	2	0
		E	4	5	15	15	12	3	3	12	17	11	40	4	53	0	3	2	1
		F	0	5	11	8	3	0	3	7	11	2	16	2	23	3	5	5	2
		G	0	2	9	10	3	0	1	9	10	0	22	0	18	3	2	0	3
		A	0	0	3	10	3	0	0	4	7	1	15	0	13	0	3	0	0
		B	2	10	13	13	7	1	17	8	8	4	14	0	64	0	3	3	2
		C	0	6	22	22	7	0	0	20	12	11	10	0	81	11	0	0	2
		D	2	3	7	13	4	1	1	12	12	1	24	0	26	8	3	0	5
		E	1	7	23	17	7	2	2	19	21	13	33	1	69	0	10	8	0
		F	0	1	8	9	5	0	2	9	7	7	14	0	23	5	6	7	3
		G	0	5	12	2	0	0	7	10	3	0	14	0	28	3	0	3	1
	SUMMER	**A**	3	0	15	25	4	0	0	10	15	2	41	0	29	0	15	7	5
		B	3	4	10	20	4	3	5	10	15	4	41	0	35	0	7	5	5
		C	0	3	25	23	6	0	3	27	20	3	44	3	51	4	0	15	2
		D	2	8	8	15	2	0	8	15	17	0	31	0	41	9	0	0	1
		E	0	1	15	12	3	0	0	8	9	5	20	0	23	7	0	5	2
		F	3	21	15	10	2	2	15	13	10	5	24	0	48	2	0	25	2
		G	0	5	30	20	5	0	5	25	20	5	72	0	46	12	0	3	2
		A	2	1	10	15	1	2	2	3	10	1	14	0	28	6	0	4	0
		B	1	2	20	25	4	0	2	10	19	3	25	4	48	0	9	3	2
		C	0	7	9	12	4	0	0	17	14	3	20	0	42	0	6	15	2
		D	1	10	15	15	1	1	7	10	10	2	32	0	31	0	8	10	1
		E	2	12	18	14	1	0	10	15	10	0	20	2	38	0	15	10	4
		F	2	4	15	11	5	0	3	7	14	3	18	3	30	0	12	4	0
		G	5	20	32	14	2	3	32	40	8	1	34	0	48	14	0	68	1

(*) includes static use that follows a given pedestrian path

USE PATTERNS - TRINDADE STATION SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	A	1	2	0	0	0	0	0	5	2	0	0	0	0	0
		B	3	1	1	0	0	0	0	10	3	10	0	0	0	0
		C	1	2	0	0	0	1	0	10	10	0	0	0	5	0
		D	0	7	3	0	1	0	1	0	10	5	0	2	0	5
		E	0	15	2	0	0	0	1	0	5,4	5	0	0	0	2
		F	0	7	2	0	0	0	0	0	4,14	3,5	0	0	0	0
		G	0	15	3	0	0	0	0	0	5,07	3,67	0	0	0	0
		A	0	3	2	0	0	0	0	0	4,33	5	0	0	0	0
		B	12	3	1	0	0	0	0	2,17	4,67	2	0	0	0	0
		C	1	4	8	0	0	0	0	5	2	8,88	0	0	0	0
		D	1	8	3	0	0	0	0	3	4,75	8	0	0	0	0
		E	1	24	21	0	0	0	1	10	8,05	8,67	0	0	0	10
		F	0	9	4	0	0	0	1	0	3,33	4,25	0	0	0	5
		G	0	13	2	0	0	0	0	0	6,62	10	0	0	0	0
	RAIN	A	0	4	0	0	2	0	0	0	7,5	0	0	1	0	0
		B	0	6	0	0	0	0	0	0	5,5	0	0	0	0	0
		C	1	5	1	0	0	0	0	7	4	5	0	0	0	0
		D	0	3	0	0	0	0	1	0	6,67	0	0	0	0	3
		E	0	9	2	0	0	0	1	0	6,11	10	0	0	0	7
		F	0	7	3	0	0	0	1	0	5,43	10	0	0	0	2
		G	0	3	4	0	0	0	0	0	3,67	10	0	0	0	0
		A	0	3	0	0	0	0	0	0	2,33	0	0	0	0	0
		B	2	3	0	0	0	0	0	0	4,33	0	0	0	0	0
		C	0	4	0	0	0	4	0	0	3,25	0	0	0	10	0
		D	0	11	4	0	0	0	0	0	4,63	10	0	0	0	0
		E	0	11	2	0	0	0	0	0	6,7	2	0	0	0	0
		F	0	12	2	0	0	0	0	0	5,67	10	0	0	0	0
		G	0	3	4	0	0	0	0	0	3,33	8,5	0	0	0	0
	SUMMER	A	0	23	0	0	11	0	0	0	2,65	0	0	10	0	0
		B	0	24	6	0	22	0	0	0	6,67	9,17	0	10	0	0
		C	0	6	3	0	0	0	0	0	2,67	2	0	0	0	0
		D	4	11	3	0	0	0	0	2	4,28	7	0	0	0	0
		E	2	3	6	0	0	0	0	10	2	8,33	0	0	0	0
		F	0	9	7	0	0	0	0	0	7	10	0	0	0	0
		G	2	20	12	0	0	0	0	2	4,8	4,17	0	0	0	0
		A	0	3	4	0	0	0	0	0	3	5	0	0	0	0
		B	0	16	10	0	0	0	0	0	7,82	10	0	0	0	0
		C	0	18	4	0	0	0	0	0	4,62	2,67	0	0	0	0
		D	0	7	6	0	0	0	0	0	3,43	5	0	0	0	0
		E	0	6	11	0	0	0	0	0	3	7,55	0	0	0	0
		F	10	0	9	0	0	0	1	10	0	7,11	0	0	0	5
		G	1	17	7	0	0	0	0	3	8,29	10	0	0	0	0

NUMBER OF USERS - TRINDADE STATION SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE				MALE					FEMALE					RACE				
			TOTAL	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEKEND	COLD	A	3	0	0	0	2	1	0	0	0	0	0	87	0	0	0
		B	5	0	0	1	4	0	0	0	0	0	0	110	6	0	0
		C	4	0	0	1	3	0	0	0	0	0	0	109	3	0	0
		D	12	0	2	5	2	0	0	0	2	1	0	81	3	2	0
		E	18	0	4	3	5	0	0	0	0	6	0	129	2	0	0
		F	9	0	0	2	4	0	0	0	1	2	0	76	0	0	0
		G	18	0	3	4	3	0	0	3	3	2	0	85	2	0	0
		A	5	0	0	3	1	0	0	0	0	1	0	19	0	0	0
		B	16	0	0	5	4	1	0	0	4	2	0	82	1	3	0
		C	13	0	3	4	4	1	0	0	0	1	0	90	3	0	0
		D	12	0	1	3	2	0	0	0	5	1	0	90	5	0	0
		E	47	0	10	7	5	1	0	12	3	8	1	167	3	0	0
		F	14	0	2	5	4	0	0	0	2	1	0	139	2	0	1
		G	15	0	4	7	2	0	0	0	2	0	0	113	0	0	0
	RAIN	A	6	0	1	3	2	0	0	0	0	0	0	35	1	0	0
		B	6	0	1	4	1	0	0	0	0	0	0	60	3	0	0
		C	7	0	0	1	4	1	0	0	0	1	0	50	0	0	0
		D	4	0	0	1	2	0	0	0	0	1	0	58	1	0	0
		E	12	0	4	1	3	0	0	2	1	1	0	102	4	3	0
		F	11	0	2	2	2	1	0	3	0	1	0	56	5	0	0
		G	7	0	0	5	1	0	0	0	1	0	0	50	1	0	0
		A	3	0	0	0	3	0	0	0	0	0	0	29	2	0	0
		B	5	0	0	3	2	0	0	0	0	0	0	83	3	2	0
		C	8	0	1	1	3	0	0	3	0	0	0	108	0	0	0
		D	15	0	4	3	5	0	0	0	1	2	0	63	6	3	0
		E	13	0	3	4	5	0	0	0	0	1	0	120	5	0	0
		F	14	0	4	3	3	0	0	1	1	2	0	59	3	0	0
		G	7	0	0	5	1	0	0	0	1	0	0	54	2	0	0
	SUMMER	A	34	3	1	2	13	5	0	0	3	7	1	104	1	0	3
		B	52	6	2	6	28	0	4	0	2	4	0	127	3	0	0
		C	9	0	1	4	0	2	0	0	1	0	1	116	1	2	0
		D	18	0	0	4	5	2	0	0	3	4	0	93	0	0	0
		E	11	1	1	2	1	0	1	1	3	1	0	53	1	0	0
		F	16	0	6	1	1	0	0	5	1	2	0	107	3	2	0
		G	34	0	7	6	5	0	0	9	3	4	0	141	8	0	0
		A	7	0	0	3	2	0	0	0	0	2	0	54	0	0	0
		B	26	0	2	3	2	0	0	17	0	2	0	110	2	0	0
		C	22	0	2	5	5	0	0	4	5	2	0	88	0	0	0
		D	13	0	1	5	3	0	0	2	1	1	0	82	2	1	0
		E	17	0	5	3	4	0	0	4	0	1	0	97	0	0	0
		F	20	1	4	4	3	0	0	2	5	1	0	82	2	0	0
		G	25	0	6	5	2	0	0	7	4	1	0	176	6	0	0

A 3.2. D. JOÃO I SQUARE

PEDESTRIAN TRAFFIC - D JOÃO I SQUARE																			
			MALE					FEMALE					TOTAL by path (*)						
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7
WEEK	COLD	**A**	0	0	5	15	6	0	3	8	23	7	32	15	4	4	9	4	0
		B	0	0	3	13	13	0	0	2	14	4	15	10	6	3	12	3	7
		C	0	0	6	10	6	0	0	8	15	7	27	22	7	0	2	0	0
		D	0	0	6	10	6	0	0	8	15	7	27	22	7	0	2	0	0
		E	0	0	6	25	15	0	0	3	20	12	63	31	3	1	5	3	3
		F	1	0	3	13	2	0	3	2	15	3	17	9	7	2	7	5	1
		G	0	0	7	5	0	0	0	5	5	0	7	11	0	2	2	3	0
		A	0	0	6	13	12	0	0	3	26	6	30	36	8	2	12	2	0
		B	0	2	8	33	12	0	0	5	30	13	83	13	0	1	3	5	0
		C	0	1	3	26	3	0	0	4	22	3	28	20	6	0	0	2	0
		D	0	6	5	25	8	1	11	4	34	3	48	25	19	9	8	6	0
		E	4	7	24	59	13	0	3	17	70	10	148	35	10	16	3	5	0
		F	2	0	20	24	12	0	0	18	17	4	67	17	10	5	10	5	0
		G	0	2	7	7	1	0	1	6	7	0	27	5	0	0	3	3	0
	RAIN	**A**	0	0	3	9	2	0	0	8	15	4	22	15	0	0	3	2	1
		B	40	0	3	9	7	40	0	3	12	12	98	14	0	0	3	5	0
		C	0	0	5	12	5	0	0	5	12	5	21	11	3	2	4	3	0
		D	0	0	7	8	10	0	0	12	13	7	23	15	7	2	7	5	0
		E	0	1	4	22	5	0	2	8	21	6	33	30	2	1	5	1	0
		F	0	1	8	26	16	1	0	8	18	16	38	25	15	2	10	5	0
		G	0	0	2	2	0	0	0	1	2	0	4	3	0	0	1	0	0
		A	0	13	6	13	11	0	11	4	16	0	38	3	0	2	16	10	6
		B	0	19	8	28	17	0	9	7	31	12	85	25	5	4	6	6	0
		C	0	0	8	40	8	0	1	7	30	10	60	30	10	4	10	4	0
		D	3	6	3	32	5	2	6	8	15	3	72	15	0	2	3	6	0
		E	0	0	2	14	7	0	0	4	10	5	82	11	4	0	4	3	0
		F	0	2	33	33	8	0	3	21	23	7	62	15	50	5	10	10	0
		G	0	1	10	7	3	0	0	10	12	3	24	4	11	2	11	7	0
	SUMMER	**A**	0	0	15	52	9	1	1	13	31	6	57	34	36	0	14	8	0
		B	2	0	7	38	13	1	0	13	36	10	41	19	21	6	32	11	0
		C	0	0	11	38	7	0	1	18	28	4	60	17	6	2	17	9	0
		D	2	3	12	43	9	1	0	14	30	7	58	26	14	0	23	11	0
		E	1	2	13	45	7	0	3	15	33	5	73	30	11	1	15	3	0
		F	0	4	15	20	2	0	5	12	16	1	37	20	8	0	7	5	0
		G	1	0	13	5	0	1	2	4	8	0	8	9	8	0	7	4	0
		A	0	0	7	18	6	0	0	7	16	3	30	11	3	47	9	2	0
		B	2	4	13	24	5	0	2	15	17	2	26	17	10	0	18	15	0
		C	4	4	19	50	6	0	5	11	26	4	43	32	23	9	16	13	0
		D	2	5	20	28	19	1	4	15	27	9	50	25	31	7	9	8	0
		E	0	0	15	32	6	0	1	14	33	7	52	27	13	0	18	7	0
		F	2	5	16	25	2	1	6	17	16	0	46	22	17	0	10	4	0
		G	0	1	15	21	0	0	1	18	23	0	32	29	6	0	35	25	6

(*) includes static use that follows a given pedestrian path

USE PATTERNS - D JOÃO I SQUARE																
			Number of users							Time spent (av.)						
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEK	COLD	**A**	0	3	0	0	0	0	1	0	8	0	0	0	0	10
		B	0	11	0	0	0	0	0	0	5,55	0	0	0	0	0
		C	0	3	1	0	0	0	2	0	4	6	0	0	0	6
		D	0	2	4	0	0	0	0	0	5	3,5	0	0	0	0
		E	20	14	3	0	0	0	0	1,5	6,71	8	0	0	0	0
		F	3	7	0	0	0	0	2	3	6,58	0	0	0	0	1,5
		G	0	3	0	0	0	0	0	0	3,67	0	0	0	0	0
		A	0	109	101	0	0	0	0	0	3,17	4,98	0	0	0	0
		B	2	3	2	0	0	1	0	3	5,67	8,5	0	0	6	0
		C	0	4	2	0	0	0	0	0	10	10	0	0	0	0
		D	1	16	8	0	0	0	0	1,5	6,25	7,25	0	0	0	0
		E	0	19	3	0	0	2	1	0	5,68	6	0	0	5	3
		F	0	18	5	0	0	3	0	0	5,06	5,6	0	0	8,33	0
		G	0	6	0	0	0	0	1	0	4,83	0	0	0	0	2
	RAIN	**A**	0	7	1	0	0	0	0	0	3,86	10	0	0	0	0
		B	0	7	0	0	0	0	0	0	9,71	0	0	0	0	0
		C	0	1	2	0	0	0	0	0	8	7	0	0	0	0
		D	2	4	0	0	0	0	1	1	8,75	0	0	0	0	2
		E	0	0	2	0	0	0	0	0	0	3	0	0	0	0
		F	0	3	0	0	0	0	0	0	7,67	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	16	0	0	0	0	0	0	5,56	0	0	0	0	0
		B	0	34	0	0	0	0	0	0	4,83	0	0	0	0	0
		C	4	13	0	0	0	0	1	3,67	4,15	0	0	0	0	5
		D	0	58	2	0	0	0	0	0	8,36	10	0	0	0	0
		E	0	63	0	0	0	0	0	0	4,98	0	0	0	0	0
		F	0	22	0	0	0	0	0	0	5	0	0	0	0	0
		G	0	15	0	0	0	0	0	0	3,47	0	0	0	0	0
	SUMMER	**A**	1	2	7	0	0	0	0	1	6	3	0	0	0	0
		B	3	1	7	0	0	0	0	2	5	5,58	0	0	0	0
		C	0	2	2	0	0	2	0	0	4	6,5	0	0	10	0
		D	0	8	5	0	0	6	0	0	2,12	7,4	0	0	10	0
		E	0	5	11	0	0	15	0	0	7,4	7,54	0	0	10	0
		F	0	1	6	0	0	0	0	0	8	5,67	0	0	0	0
		G	0	0	2	0	0	0	0	0	0	4	0	0	0	0
		A	1	4	2	0	0	0	0	2	3,5	6,5	0	0	0	0
		B	1	4	1	0	0	1	0	1	4	10	0	0	10	0
		C	1	0	2	0	2	0	1	1	0	4	0	4	0	1
		D	0	0	5	0	0	6	1	0	0	5,4	0	0	10	5
		E	0	9	8	0	1	0	1	0	3,67	5,5	0	4	0	6
		F	0	1	7	0	0	5	0	0	2	5	0	0	10	0
		G	0	65	26	0	0	0	0	0	9,88	10	0	0	0	0

NUMBER OF USERS - D JOÃO I SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE					RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEK	COLD	A	4	0	0	0	3	0	0	0	0	1	0	71	0	0	0
		B	11	0	0	1	5	0	0	0	1	4	0	60	0	0	0
		C	6	0	0	1	2	1	0	0	0	1	1	78	1	0	0
		D	6	0	0	1	1	2	0	0	0	1	1	58	0	0	0
		E	37	2	1	3	7	8	1	0	2	6	7	108	3	6	0
		F	12	1	0	2	3	1	0	0	1	4	0	51	3	0	0
		G	3	0	0	3	0	0	0	0	0	0	0	25	0	0	0
		A	210	50	0	1	4	2	50	0	1	2	0	176	0	0	0
		B	8	0	0	3	3	0	0	0	1	1	0	109	1	1	0
		C	6	0	0	3	3	0	0	0	0	0	0	66	2	0	0
		D	26	1	1	4	8	2	0	0	3	6	1	120	3	0	0
		E	25	0	0	6	8	2	0	0	4	5	0	224	5	3	0
		F	26	0	0	7	7	2	0	0	5	5	0	123	0	0	0
		G	7	0	0	3	3	0	0	0	1	0	0	38	0	0	0
	RAIN	A	8	0	0	0	5	1	0	0	0	2	0	47	1	0	0
		B	7	0	0	4	3	0	0	0	0	0	0	123	3	0	0
		C	3	0	0	0	2	0	0	0	0	0	0	47	0	0	0
		D	11	0	0	1	2	1	0	0	0	2	1	61	3	0	0
		E	2	0	0	0	2	0	0	0	0	0	0	69	2	0	0
		F	3	0	0	0	3	0	0	0	0	0	0	94	3	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0
		A	16	0	4	5	3	0	0	2	1	1	0	88	0	2	0
		B	34	0	10	8	2	0	0	7	6	0	0	163	1	0	0
		C	18	0	1	3	5	1	0	0	1	4	0	118	0	1	0
		D	60	20	0	5	12	0	15	1	1	6	0	137	4	2	0
		E	63	30	0	1	2	0	30	0	0	1	0	106	0	0	0
		F	22	0	0	3	10	0	0	0	2	7	0	143	7	2	0
		G	15	0	0	2	5	0	0	0	2	6	0	61	0	0	0
	SUMMER	A	10	0	0	3	3	0	0	0	3	1	0	138	0	0	0
		B	11	0	0	1	2	1	0	0	4	2	1	131	0	0	0
		C	6	0	0	2	2	0	0	0	2	0	0	110	1	2	0
		D	19	0	0	5	7	3	0	0	2	1	1	138	2	0	0
		E	31	0	0	6	10	1	0	0	6	8	0	150	5	0	0
		F	7	0	0	3	0	2	0	0	1	1	0	80	0	1	1
		G	2	0	0	1	0	0	0	0	1	0	0	36	0	0	0
		A	7	0	0	2	1	0	0	0	2	0	0	61	1	0	0
		B	7	0	0	2	2	1	0	0	1	0	1	91	0	0	0
		C	6	0	1	0	3	0	0	0	2	1	0	136	0	0	0
		D	12	0	0	2	4	1	0	1	1	3	0	139	3	0	0
		E	19	0	1	4	4	1	0	0	3	3	3	125	0	2	0
		F	13	0	2	3	2	1	0	1	2	2	0	101	2	0	0
		G	91	5	0	8	35	0	5	0	7	31	0	168	2	0	0

PEDESTRIAN TRAFFIC - D JOÃO I SQUARE																			
			MALE					FEMALE					TOTAL by path (*)						
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7
WEEKEND	COLD	**A**	0	0	3	14	12	0	0	4	18	14	29	25	5	4	0	4	1
		B	2	1	2	18	9	1	1	7	22	5	36	30	4	4	6	1	0
		C	4	1	12	20	4	2	4	12	18	5	19	44	20	22	8	5	3
		D	2	5	10	10	4	1	7	9	18	6	15	38	15	19	13	9	0
		E	2	5	7	13	2	1	3	13	11	2	30	18	9	1	5	2	0
		F	1	0	10	12	3	0	0	5	13	2	16	20	8	7	5	4	0
		G	0	0	3	11	1	0	0	5	12	2	11	8	3	0	10	7	0
		A	0	2	10	13	3	0	0	10	6	1	22	7	0	5	2	1	13
		B	0	0	3	13	15	0	0	3	10	7	19	17	1	4	3	3	10
		C	2	0	2	14	2	1	1	2	13	2	22	7	5	1	2	2	5
		D	4	3	10	21	8	6	2	3	18	8	36	25	10	6	8	6	0
		E	3	3	8	18	3	3	2	8	18	6	39	23	4	5	3	4	0
		F	0	2	8	20	4	0	1	8	10	2	22	18	3	1	6	7	0
		G	0	1	25	11	3	0	0	17	13	2	17	22	10	0	15	3	0
	RAIN	**A**	0	0	0	7	2	0	0	0	5	3	14	5	0	0	1	2	0
		B	4	0	3	18	8	0	0	1	7	3	26	2	10	0	3	2	7
		C	1	0	1	8	0	1	1	5	1	2	17	1	0	0	1	1	5
		D	1	0	1	6	3	1	0	1	3	2	8	3	1	0	2	3	1
		E	10	3	2	9	3	10	3	3	10	2	25	15	5	11	5	3	3
		F	0	5	17	12	2	0	4	10	7	0	24	15	3	0	12	7	0
		G	0	3	20	15	0	0	2	16	5	0	25	10	4	0	17	2	0
		A	0	0	1	6	6	0	0	1	2	2	11	7	0	0	0	0	3
		B	3	0	2	12	10	0	0	2	6	3	13	11	8	0	4	4	8
		C	0	2	4	10	3	0	1	3	6	4	28	4	0	0	1	2	2
		D	1	0	1	8	2	0	0	1	9	1	19	3	1	0	2	3	0
		E	0	1	10	10	3	0	2	13	13	2	41	8	6	0	3	5	0
		F	0	0	17	17	3	0	1	20	23	7	53	19	5	0	10	5	0
		G	0	5	13	10	0	0	0	6	5	0	12	10	3	0	11	5	0
	SUMMER	**A**	0	2	12	29	4	1	1	8	20	6	24	17	24	0	7	12	0
		B	3	0	17	15	5	2	0	16	22	5	20	25	10	4	24	10	0
		C	2	3	9	25	5	1	3	7	18	5	36	14	14	0	9	10	0
		D	0	1	6	8	6	0	1	1	8	4	19	4	7	0	4	3	0
		E	2	0	11	19	3	0	1	12	21	0	23	6	6	2	27	11	0
		F	3	0	15	17	7	1	2	10	8	4	37	14	2	5	14	2	0
		G	0	3	12	17	7	0	3	10	16	7	35	20	15	3	4	10	0
		A	0	0	1	15	3	1	0	0	10	2	18	9	7	1	0	2	0
		B	0	0	6	20	3	0	0	3	13	1	29	10	9	0	1	0	0
		C	0	1	5	10	1	0	0	2	6	1	20	3	6	0	0	0	0
		D	0	2	11	6	3	0	1	11	5	0	24	5	4	0	5	3	0
		E	0	0	19	20	2	0	0	8	11	0	26	12	7	4	11	5	0
		F	0	1	12	20	2	0	2	4	13	2	24	12	5	2	3	10	2
		G	0	7	7	21	2	0	9	4	13	2	18	3	16	0	9	22	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - D JOÃO I SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	**A**	1	1	1	0	0	0	0	1	2	5	0	0	0	0
		B	1	4	0	0	0	0	0	1,33	8	0	0	0	0	0
		C	13	36	1	0	0	0	0	2,25	2,89	2	0	0	0	0
		D	20	23	5	0	0	2	0	2	6,61	3,2	0	0	10	0
		E	0	0	6	0	0	3	0	0	0	4,67	0	0	10	0
		F	10	4	0	0	0	0	0	4	2,5	0	0	0	0	0
		G	0	6	0	0	0	0	0	0	4	0	0	0	0	0
		A	0	5	9	0	0	0	0	0	5	6,67	0	0	0	0
		B	0	6	3	0	0	1	0	0	9,17	3,67	0	0	3	0
		C	4	1	1	0	0	3	0	1,33	1	10	0	0	10	0
		D	2	6	6	0	0	0	0	6	7,33	7,33	0	0	0	0
		E	2	4	6	0	0	0	0	1,5	5	3	0	0	0	0
		F	0	5	2	0	0	0	0	0	3,2	2	0	0	0	0
		G	0	18	0	0	0	2	0	0	6,89	0	0	0	10	0
	RAIN	**A**	1	2	0	0	2	0	0	1,33	5	0	0	1	0	0
		B	0	6	1	0	0	0	0	0	5	10	0	0	0	0
		C	0	5	0	0	0	0	0	0	4	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	0	13	0	0	0	0	0	0	2,77	0	0	0	0	0
		F	0	4	0	0	0	0	0	0	2,5	0	0	0	0	0
		G	0	6	1	0	0	0	0	0	8,5	5	0	0	0	0
		A	0	3	0	0	0	0	0	0	2,33	0	0	0	0	0
		B	2	8	3	0	0	0	0	1,5	5,88	7,33	0	0	0	0
		C	0	9	1	0	0	0	0	0	7,89	3	0	0	0	0
		D	6	2	0	0	0	0	0	1	5	0	0	0	0	0
		E	0	13	0	0	0	0	0	0	6,54	0	0	0	0	0
		F	0	7	0	0	0	0	0	0	7	0	0	0	0	0
		G	0	2	0	0	0	0	0	0	2	0	0	0	0	0
	SUMMER	**A**	4	0	3	0	0	0	0	1	0	4,33	0	0	0	0
		B	3	6	8	0	0	0	0	1,33	3,33	6,62	0	0	0	0
		C	0	2	3	0	0	0	0	0	2	8	0	0	0	0
		D	0	1	1	0	0	1	0	0	10	8	0	0	2	0
		E	0	4	2	0	0	6	0	0	2,75	4	0	0	10	0
		F	0	2	6	0	0	6	1	0	3	5	0	0	10	1
		G	0	8	5	0	0	0	1	0	1,5	6,4	0	0	0	3
		A	0	2	5	0	0	6	0	0	1,5	6,2	0	0	10	0
		B	0	12	5	0	0	5	0	0	7,17	8,6	0	0	10	0
		C	0	1	2	0	0	3	0	0	1	3	0	0	10	0
		D	0	2	1	0	0	0	0	0	5	10	0	0	0	0
		E	0	4	2	0	0	5	0	0	4	4	0	0	9,2	0
		F	0	4	10	0	0	10	0	3	5,75	8,5	0	0	8	0
		G	0	3	3	0	0	0	0	0	1	10	0	0	0	0

NUMBER OF USERS - D. JOÃO I SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE					RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEKEND	COLD	**A**	3	0	0	0	3	0	0	0	0	0	0	65	3	0	0
		B	5	0	0	1	2	1	0	0	0	1	0	71	0	2	0
		C	50	0	2	10	15	3	0	1	9	8	2	130	1	1	0
		D	50	2	3	10	8	2	2	4	12	7	0	122	0	0	0
		E	9	0	1	3	2	0	0	1	2	0	0	66	2	0	0
		F	14	0	0	3	3	1	0	1	2	4	0	60	0	0	0
		G	6	0	0	3	0	0	0	0	3	0	0	40	0	0	0
		A	14	0	1	2	4	2	0	0	0	0	0	54	0	0	0
		B	10	0	0	2	4	1	0	0	1	2	0	58	1	2	0
		C	9	0	0	1	4	1	0	0	1	1	1	48	0	0	0
		D	14	1	0	2	5	3	0	0	0	4	1	99	0	0	0
		E	12	0	0	2	4	2	0	0	2	2	0	84	2	0	0
		F	7	0	0	2	2	0	0	0	2	1	0	62	0	0	0
		G	20	0	0	5	5	0	2	1	4	3	0	92	0	0	0
	RAIN	**A**	5	0	0	1	2	2	0	0	0	0	0	22	0	0	0
		B	7	1	0	0	4	2	0	0	0	0	0	51	0	0	0
		C	5	1	0	1	0	3	0	0	0	0	0	25	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0
		E	13	0	1	3	4	0	0	0	3	2	0	68	0	0	0
		F	4	0	0	2	2	0	0	0	0	0	0	59	2	0	0
		G	7	0	2	2	1	0	0	1	1	0	0	68	0	0	0
		A	3	0	0	0	1	2	0	0	0	0	0	21	0	0	0
		B	13	1	0	2	6	3	0	0	0	1	0	46	2	0	3
		C	10	2	0	2	4	2	0	0	0	0	0	43	0	0	0
		D	5	0	0	1	1	1	0	0	1	1	0	26	2	0	0
		E	13	0	0	5	4	0	0	0	3	1	0	67	0	0	0
		F	7	0	0	3	1	0	0	0	2	1	0	93	2	0	0
		G	2	0	0	2	0	0	0	0	0	0	0	41	0	0	0
	SUMMER	**A**	5	0	0	0	0	3	0	0	0	1	1	85	3	0	0
		B	17	1	0	2	7	3	0	0	2	2	0	100	2	0	0
		C	5	0	0	0	4	1	0	0	0	0	0	80	3	0	0
		D	3	0	0	1	1	0	0	0	0	1	0	37	0	1	0
		E	12	0	0	2	5	1	0	0	0	4	0	80	1	0	0
		F	15	0	0	4	5	2	0	0	0	4	0	81	1	0	0
		G	14	0	0	3	4	0	0	0	2	5	0	86	2	1	0
		A	13	0	1	1	5	1	0	0	0	4	0	44	0	0	0
		B	22	0	0	3	11	1	0	0	2	4	1	66	2	0	0
		C	6	0	0	0	4	0	0	0	0	2	0	32	0	0	0
		D	3	0	0	2	1	0	0	0	0	0	0	42	0	0	0
		E	11	0	1	2	5	1	0	0	2	0	0	67	3	0	1
		F	26	1	0	4	8	3	0	0	1	6	2	79	2	0	0
		G	6	0	0	2	0	0	0	0	1	3	0	64	2	5	0

A 3.3. CARDOSAS SQUARE

PEDESTRIAN TRAFFIC - CARDOSAS SQUARE																		
			MALE					FEMALE					TOTAL by path (*)					
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6
WEEK	COLD	**A**	0	0	3	0	0	0	0	3	0	0	6	0	0	0	0	0
		B	0	0	0	1	1	0	0	0	1	1	4	0	0	0	0	2
		C	0	0	0	2	0	0	0	0	1	0	3	0	0	0	0	1
		D	0	0	3	0	0	0	0	2	1	0	6	0	0	0	0	0
		E	0	0	0	2	0	0	0	0	0	1	3	0	0	0	0	10
		F	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	3	2	3	0	0	1	4	1	12	4	0	1	0	0
		B	0	0	0	7	1	0	0	0	3	2	14	0	1	0	0	0
		C	0	0	3	0	0	0	0	3	0	0	6	0	0	0	0	0
		D	0	0	0	2	2	0	0	0	1	0	7	0	0	1	2	0
		E	2	2	3	5	2	0	0	4	4	1	23	0	7	0	0	14
		F	0	0	0	5	1	0	0	0	3	0	10	0	4	3	0	2
		G	0	0	3	3	0	0	0	0	1	0	4	0	0	3	0	0
	RAIN	**A**	0	0	0	7	0	0	0	0	6	0	0	13	0	0	0	1
		B	0	0	0	10	1	0	0	0	7	0	0	18	0	0	0	0
		C	0	0	0	5	0	0	0	0	6	0	11	0	0	0	0	0
		D	0	0	0	3	2	0	0	0	1	3	5	4	0	0	0	0
		E	0	0	0	1	0	0	0	0	1	0	3	0	0	1	0	4
		F	0	0	1	4	0	0	0	0	1	0	0	6	0	0	0	0
		G	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0
		B	1	0	1	3	1	0	0	0	3	2	8	0	0	3	1	0
		C	0	0	0	2	3	0	0	2	1	1	9	0	0	0	0	3
		D	0	0	0	2	0	0	0	0	1	1	4	0	0	0	0	1
		E	0	0	1	3	0	0	0	0	2	0	2	7	0	0	0	0
		F	0	0	0	2	1	0	0	3	5	1	12	0	0	0	0	2
		G	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0
	SUMMER	**A**	0	0	0	4	0	0	0	1	0	0	4	0	0	1	0	0
		B	0	0	1	4	1	0	0	1	2	0	9	0	0	2	0	1
		C	0	0	0	3	0	0	0	1	2	0	5	0	0	0	0	5
		D	0	0	0	1	0	0	0	0	2	0	2	0	0	1	0	0
		E	0	3	2	6	0	1	5	1	2	1	19	0	0	0	9	0
		F	2	0	3	3	1	1	0	1	2	0	9	0	0	3	2	3
		G	1	0	0	3	0	1	0	0	2	0	7	0	0	0	0	4
		A	0	0	0	4	0	0	0	1	0	0	2	0	0	4	0	1
		B	0	0	2	1	0	0	0	0	2	1	6	0	0	0	0	3
		C	0	0	0	5	0	0	0	0	3	0	8	0	0	0	0	1
		D	1	0	3	4	0	0	0	2	1	0	7	0	0	2	2	0
		E	0	0	3	4	1	0	0	5	4	0	15	0	0	6	2	5
		F	0	0	3	4	0	0	0	1	4	0	12	0	0	0	2	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - CARDOSAS SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEK	COLD	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	4	1	0	0	0	0	0	1,5	1	0	0	0	0	0
		C	2	0	0	0	0	0	0	4	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	10	10	2	0	0	0	0	1	2	4	0	0	0	0
		F	0	0	1	0	0	0	0	0	0	10	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	2	0	0	0	0	1	0	4	0	0	0	0	2
		B	2	2	0	0	0	0	0	5	1	0	0	0	0	0
		C	0	0	4	0	0	0	0	0	0	10	0	0	0	0
		D	3	1	0	0	0	0	1	2	5	0	0	0	0	6
		E	18	3	0	0	2	2	0	1,78	2,33	0	0	5	5	0
		F	2	2	6	0	0	0	0	1,5	3	6,33	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RAIN	A	1	0	0	0	0	0	0	2	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	3	0	0	0	0	0	0	10	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	3	3	0	0	0	0	0	1,5	2	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	1	0	0	0	0	0	0	2	0	0	0	0	0	0
		C	3	1	0	0	0	0	0	3	10	0	0	0	0	0
		D	1	0	0	0	0	0	0	3	0	0	0	0	0	0
		E	2	1	0	0	0	0	0	2	3	0	0	0	0	0
		F	2	2	3	0	0	0	0	2	10	10	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUMMER	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	3	0	0	0	0	0	0	1	0	0	0	0	0	0
		C	3	0	1	0	0	0	0	1,5	0	3	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	5	0	2	0	0	0	0	3,5	0	3	0	0	0	0
		F	3	3	0	0	0	0	0	1	1	0	0	0	0	0
		G	2	1	1	0	0	0	0	1,5	10	10	0	0	0	0
		A	1	0	0	0	0	0	0	1	0	0	0	0	0	0
		B	3	0	0	0	0	0	0	1	0	0	0	0	0	0
		C	1	0	0	0	0	0	0	1	0	0	0	0	0	0
		D	3	0	0	0	0	0	0	3	0	0	0	0	0	0
		E	8	2	1	0	0	0	0	1,08	1	7	0	0	0	0
		F	0	0	1	0	1	0	0	0	0	2	0	5	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NUMBER OF USERS - CARDOSAS SQUARE																			
			USE												PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE						RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY		WHITE	BLACK	ASIAN	OTHER
WEEK	COLD	A	0	0	0	0	0	0	0	0	0	0	0		6	0	0	0
		B	0	0	0	0	2	0	0	0	0	1	0		7	0	0	0
		C	2	0	0	0	1	0	0	0	0	0	0		4	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		6	0	0	0
		E	22	0	0	3	7	3	0	0	2	5	2		25	0	0	0
		F	1	0	0	0	0	0	0	0	1	0	0		3	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
		A	3	0	0	1	2	0	0	0	0	0	0		17	0	0	0
		B	2	0	0	0	2	0	0	0	0	0	0		15	0	0	0
		C	4	0	0	0	4	0	0	0	0	0	0		10	0	0	0
		D	5	0	0	0	2	2	0	0	0	1	0		8	0	2	0
		E	25	1	0	3	7	4	1	0	3	4	2		45	0	3	0
		F	10	0	0	2	3	1	0	0	2	2	0		19	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		7	0	0	0
	RAIN	A	1	0	0	0	1	0	0	0	0	0	0		14	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		18	0	0	0
		C	3	0	0	0	2	0	0	0	0	1	0		15	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		9	0	0	0
		E	6	0	0	0	3	1	0	0	0	2	0		8	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0		6	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		3	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0		3	0	0	0
		B	1	0	0	0	1	0	0	0	0	0	0		12	0	0	0
		C	4	0	0	0	2	1	0	0	0	1	0		12	0	0	0
		D	1	0	0	0	0	0	0	0	0	1	0		6	0	0	0
		E	3	0	0	0	3	0	0	0	0	0	0		9	0	0	0
		F	7	0	0	0	3	0	0	0	2	2	0		19	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		3	0	0	0
	SUMMER	A	0	0	0	0	0	0	0	0	0	0	0		5	0	0	0
		B	3	0	0	1	1	0	0	0	1	0	0		15	0	0	0
		C	4	0	0	0	2	0	0	0	0	2	0		10	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		3	0	0	0
		E	7	1	0	0	2	0	0	0	0	3	1		35	0	0	0
		F	6	0	0	0	3	0	0	0	0	3	0		23	0	0	0
		G	4	0	0	1	2	0	0	0	1	0	0		13	0	0	0
		A	1	0	0	0	1	0	0	0	0	0	0		7	0	0	0
		B	3	0	0	2	0	1	0	0	0	0	0		12	0	0	0
		C	1	0	0	0	0	0	0	0	0	1	0		10	0	0	0
		D	3	0	0	1	1	0	0	0	0	1	0		14	0	0	0
		E	11	0	0	2	2	0	0	0	3	4	0		39	0	0	0
		F	2	1	0	0	0	0	1	0	0	0	0		12	0	0	2
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0

PEDESTRIAN TRAFFIC - CARDOSAS SQUARE																		
			MALE					FEMALE					TOTAL by path (*)					
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6
WEEKEND	COLD	A	0	0	0	2	0	0	0	0	1	0	3	0	0	0	0	1
		B	0	0	0	0	1	0	0	0	3	0	2	0	2	2	0	0
		C	0	0	2	1	1	0	0	2	2	2	10	0	2	0	0	1
		D	0	0	0	1	0	0	0	0	2	1	6	0	4	0	0	3
		E	0	0	2	3	0	0	0	1	1	1	9	0	0	1	0	2
		F	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
		B	0	0	0	1	0	0	0	0	2	0	4	0	1	1	0	6
		C	0	1	0	2	0	0	0	0	2	0	5	0	0	0	0	5
		D	0	0	3	3	2	1	0	3	5	1	16	0	0	5	0	15
		E	1	0	1	3	2	1	0	1	4	2	13	0	0	0	4	12
		F	0	0	2	3	1	0	0	1	1	0	6	0	0	2	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RAIN	A	0	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0
		B	0	1	0	1	1	0	0	2	1	2	3	0	5	0	0	10
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
		D	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
		E	0	0	1	1	0	0	0	2	1	0	0	0	0	1	0	8
		F	0	0	1	2	0	0	0	0	2	0	3	0	0	2	0	1
		G	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0
		A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
		B	0	0	2	4	0	0	0	2	4	3	12	0	4	3	0	3
		C	0	0	1	0	1	0	0	0	1	0	3	0	0	0	0	3
		D	0	1	3	2	1	0	0	2	2	3	13	0	3	0	0	0
		E	0	0	0	3	0	0	0	1	2	0	2	0	0	6	0	0
		F	0	0	1	2	0	0	0	2	2	0	4	0	0	3	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUMMER	A	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	11
		B	0	0	0	2	3	0	1	0	2	0	0	0	0	4	0	9
		C	1	2	5	3	3	1	0	4	4	0	0	0	0	16	0	12
		D	1	0	0	3	0	0	0	0	1	0	0	0	0	3	0	2
		E	4	0	2	4	1	0	0	2	3	1	18	0	3	5	0	0
		F	0	0	0	5	0	0	0	0	5	0	0	0	0	4	0	12
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
		B	0	0	0	7	0	0	0	0	1	0	0	0	0	5	1	4
		C	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0
		D	0	0	0	2	0	0	0	0	1	0	0	0	0	2	0	1
		E	0	0	1	2	0	0	0	1	1	0	0	0	0	3	0	4
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - CARDOSAS SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	**A**	2	0	0	0	0	0	0	1	0	0	0	0	0	0
		B	2	0	0	0	0	0	0	2	0	0	0	0	0	0
		C	2	1	1	0	0	0	0	1,5	10	10	0	0	0	0
		D	9	0	0	0	0	0	0	2	0	0	0	0	0	0
		E	3	1	0	0	0	0	0	1	3	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	6	3	0	0	0	0	0	2,33	1,67	0	0	0	0	0
		C	5	0	0	0	0	0	0	3,5	0	0	0	0	0	0
		D	18	0	0	0	0	0	0	2,95	0	0	0	0	0	0
		E	12	2	0	0	0	0	0	4	3	0	0	0	0	0
		F	0	0	1	0	0	0	0	0	0	10	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RAIN	**A**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	10	0	0	0	0	0	0	1,82	0	0	0	0	0	0
		C	4	0	0	0	0	0	0	1	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	4	0	0	0	0	0	0	2,5	0	0	0	0	0	0
		F	1	0	0	0	0	0	0	1	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	7	2	0	0	0	0	0	2,71	3	0	0	0	0	0
		C	3	0	0	0	0	0	0	2	0	0	0	0	0	0
		D	2	0	0	0	0	0	0	4	0	0	0	0	0	0
		E	0	2	0	0	0	0	0	0	4	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUMMER	**A**	7	0	0	0	0	0	0	2,71	0	0	0	0	0	0
		B	4	0	2	0	0	0	0	1,75	0	2	0	0	0	0
		C	0	5	0	0	0	0	0	0	1	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	1	6	3	0	0	0	0	1	1,17	8,67	0	0	0	0
		F	5	3	53	0	0	0	0	2	3	9,85	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	1	0	0	0	0	0	0	1	0	0	0	0	0	0
		B	0	1	1	0	0	0	0	0	4	4	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	2	0	0	0	0	0	0	1	0	0	0	0	0	0
		F	1	0	0	0	0	0	0	1	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NUMBER OF USERS - CARDOSAS SQUARE																			
			USE												PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE						RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY		WHITE	BLACK	ASIAN	OTHER
0WEEKEND	COLD	A	2	0	0	0	1	0	0	0	0	0	0		4	0	0	0
		B	2	0	0	0	2	0	0	0	0	0	0		6	0	0	0
		C	4	0	0	1	1	0	0	0	1	1	0		14	0	0	0
		D	9	0	0	0	4	2	0	0	0	2	1		13	0	0	0
		E	4	0	0	0	2	1	0	0	0	1	0		12	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0		3	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0		1	0	0	0
		B	9	0	0	0	5	2	0	0	0	2	0		12	0	0	0
		C	5	0	1	0	2	0	0	0	0	2	0		10	0	0	0
		D	18	0	0	2	5	3	0	0	1	6	1		36	0	0	0
		E	14	0	0	1	5	2	0	0	1	3	2		28	0	0	1
		F	1	0	0	1	0	0	0	0	0	0	0		9	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	RAIN	A	0	0	0	0	0	0	0	0	0	0	0		2	0	0	0
		B	10	2	0	3	2	1	0	0	0	2	0		18	0	0	0
		C	4	0	0	0	1	1	0	0	0	1	1		4	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		1	0	0	0
		E	4	0	0	1	0	0	0	0	2	1	0		9	0	0	0
		F	1	0	0	1	0	0	0	0	0	0	0		6	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		2	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0		1	0	0	0
		B	7	0	0	0	3	2	0	0	0	2	0		22	0	0	0
		C	3	0	0	0	2	0	0	0	0	1	0		6	0	0	0
		D	2	0	0	2	0	0	0	0	0	0	0		16	0	0	0
		E	2	0	0	0	2	0	0	0	0	0	0		8	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0		7	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	SUMMER	A	7	0	0	0	3	1	0	0	0	3	0		10	1	0	0
		B	6	0	0	0	2	0	0	2	0	2	0		14	0	0	0
		C	5	0	0	0	3	0	0	0	0	2	0		28	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		5	0	0	0
		E	10	0	0	1	4	0	0	0	2	3	0		27	0	0	0
		F	61	0	0	6	15	8	0	0	6	18	8		71	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
		A	1	0	0	0	1	0	0	0	0	0	0		1	0	0	0
		B	2	0	0	0	2	0	0	0	0	0	0		10	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0		3	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		3	0	0	0
		E	2	0	0	0	1	0	0	0	0	1	0		7	0	0	0
		F	1	0	0	0	1	0	0	0	0	0	0		1	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0

A 3.4. LISBOA SQUARE

PEDESTRIAN TRAFFIC - LISBOA SQUARE																
			MALE					FEMALE					TOTAL by path (*)			
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4
WEEK	COLD	**A**	0	0	1	5	1	0	0	1	3	1	0	0	14	0
		B	0	0	2	5	1	0	0	2	4	1	0	0	20	0
		C	0	0	3	3	1	1	0	3	6	1	0	0	19	3
		D	0	0	5	5	1	0	0	5	4	0	0	0	19	3
		E	2	1	3	7	3	2	3	8	10	3	0	0	41	10
		F	0	0	3	2	1	0	1	4	0	0	0	0	9	2
		G	0	3	15	5	0	0	2	12	4	1	0	0	18	24
		A	0	0	3	3	1	0	2	2	6	2	0	0	19	3
		B	1	0	2	3	1	0	0	3	2	1	0	0	13	3
		C	0	0	3	3	1	0	0	4	3	1	0	0	9	9
		D	0	0	2	5	1	2	0	3	5	3	0	0	21	7
		E	1	0	6	16	6	0	0	9	9	6	0	0	30	30
		F	1	0	4	12	1	0	0	13	9	1	0	0	30	13
		G	0	2	10	6	0	0	1	13	7	0	0	0	21	23
	RAIN	**A**	0	0	3	2	0	0	0	3	2	0	0	0	11	2
		B	0	0	7	2	0	0	0	5	3	0	0	0	10	7
		C	0	0	7	1	0	0	0	5	2	0	0	0	12	5
		D	0	0	5	4	0	0	0	5	3	2	0	0	17	9
		E	0	7	7	2	1	0	6	14	2	1	0	0	20	20
		F	0	0	3	2	0	0	3	1	0	0	0	0	6	4
		G	0	0	5	1	0	0	0	5	1	0	0	0	7	10
		A	0	0	1	4	1	0	0	1	4	1	0	0	9	5
		B	0	6	4	7	4	0	1	5	8	1	0	0	39	6
		C	0	0	2	4	1	0	0	3	7	1	0	0	14	4
		D	0	1	6	0	0	0	0	8	0	0	0	0	16	7
		E	0	0	5	1	0	0	0	5	2	0	0	0	11	12
		F	0	0	6	2	0	0	0	4	2	0	0	0	9	5
		G	0	0	10	1	0	0	0	7	1	0	0	0	20	5
	SUMMER	**A**	0	0	3	3	2	0	0	2	4	2	0	0	16	2
		B	0	0	0	16	5	0	0	0	17	3	0	0	28	17
		C	2	1	4	12	3	1	1	3	12	1	0	0	40	7
		D	1	1	5	10	3	1	2	5	10	2	0	0	39	5
		E	1	3	4	5	3	1	5	13	8	2	0	0	40	12
		F	0	2	9	5	3	0	3	12	5	2	0	0	39	14
		G	0	0	5	4	0	0	1	5	4	0	0	0	17	7
		A	0	0	5	6	1	0	0	5	5	2	0	0	23	4
		B	0	2	6	11	7	0	0	8	11	5	0	0	54	11
		C	0	1	6	16	6	0	0	2	11	6	0	0	44	6
		D	0	0	7	7	6	0	0	4	4	3	0	0	29	10
		E	0	0	8	6	3	0	0	12	13	3	0	0	32	18
		F	0	0	3	5	1	0	0	6	5	0	0	0	25	3
		G	0	3	9	11	0	0	1	10	8	0	0	0	35	11

(*) includes static use that follows a given pedestrian path

USE PATTERNS - LISBOA SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEK	COLD	**A**	0	2	0	0	0	0	0	0	5	0	0	0	0	0
		B	0	4	1	0	0	0	0	0	2	3	0	0	0	0
		C	4	0	0	0	0	6	0	1	0	0	0	0	10	0
		D	2	0	0	0	0	6	0	2,33	0	0	0	0	10	0
		E	9	0	0	0	0	20	1	2	0	0	0	0	10	10
		F	0	1	0	0	0	0	0	0	10	0	0	0	0	0
		G	0	0	0	0	0	6	0	0	0	0	0	0	10	0
		A	0	2	0	0	0	8	0	0	3	0	0	0	10	0
		B	2	0	0	3	0	0	0	2	0	0	1	0	0	0
		C	3	1	0	0	0	7	0	3	10	0	0	0	8,17	0
		D	2	0	0	0	0	8	0	1	0	0	0	0	7,63	0
		E	2	2	0	0	0	8	1	3	2	0	0	0	8,88	2
		F	1	0	0	0	0	5	1	2	0	0	0	0	10	3
		G	0	5	0	0	0	7	0	0	3.8	0	0	0	10	0
	RAIN	**A**	0	2	0	0	0	0	0	0	5	0	0	0	0	0
		B	0	4	1	0	0	0	0	0	2	3	0	0	0	0
		C	4	0	0	0	0	6	0	1	0	0	0	0	10	0
		D	2	0	0	0	0	6	0	2,33	0	0	0	0	10	0
		E	9	0	0	0	0	20	1	2	0	0	0	0	10	10
		F	0	1	0	0	0	0	0	0	10	0	0	0	0	0
		G	0	0	0	0	0	6	0	0	0	0	0	0	10	0
		A	0	2	0	0	0	8	0	0	3	0	0	0	10	0
		B	2	0	0	3	0	0	0	2	0	0	1	0	0	0
		C	3	1	0	0	0	7	0	3	10	0	0	0	8,71	0
		D	2	0	0	0	0	8	0	1	0	0	0	0	7,63	0
		E	2	2	0	0	0	8	1	3	2	0	0	0	8,88	2
		F	1	0	0	0	0	5	1	1	0	0	0	0	10	3
		G	0	5	0	0	0	7	0	0	3,8	0	0	0	10	0
	SUMMER	**A**	2	1	0	0	0	2	0	2	2	0	0	0	5	0
		B	1	8	0	0	0	6	0	6	10	0	0	0	10	0
		C	4	3	0	0	0	12	1	3	2,33	0	0	0	10	10
		D	4	2	0	0	0	12	0	1	10	0	0	0	10	0
		E	3	0	3	0	0	12	0	2	0	7,33	0	0	9,67	0
		F	0	3	2	0	0	11	0	0	5	5	0	0	9,63	0
		G	2	0	0	0	0	5	0	1	0	0	0	0	8	0
		A	1	5	0	0	0	2	0	1	8	0	0	0	10	0
		B	11	3	1	0	0	15	1	3,28	5	5	0	0	8,67	5
		C	2	6	0	0	0	8	0	2	5,67	0	0	0	10	0
		D	2	6	0	0	0	8	0	2	5,67	0	0	0	10	0
		E	1	2	2	0	0	15	0	1	1	4	0	0	9,33	0
		F	2	6	1	0	0	5	0	1	5,67	10	0	0	10	0
		G	0	4	0	0	0	8	0	0	2,5	0	0	0	9,5	0

NUMBER OF USERS - LISBOA SQUARE																			
			USE												PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE						RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY		WHITE	BLACK	ASIAN	OTHER
0WEEK	COLD	A	2	0	0	0	2	0	0	0	0	0	0		14	0	0	0
		B	5	0	0	1	2	0	0	0	0	2	0		20	0	0	0
		C	10	0	0	1	3	1	0	0	2	2	1		28	0	0	0
		D	8	0	0	2	2	0	0	0	2	2	0		27	1	0	0
		E	30	0	0	3	6	3	0	0	9	7	2		70	2	0	0
		F	1	0	0	0	0	1	0	0	0	0	0		12	0	0	0
		G	6	0	0	3	0	0	0	0	3	0	0		48	0	0	0
		A	10	0	0	0	4	0	0	0	4	2	0		27	0	2	0
		B	5	0	0	0	2	0	0	0	0	1	0		16	0	0	0
		C	11	0	0	4	2	1	0	0	3	14	0		21	0	2	0
		D	10	0	0	2	2	1	0	0	1	2	2		29	0	2	0
		E	13	0	0	5	1	1	0	0	4	1	1		64	0	2	0
		F	7	0	0	0	1	0	0	0	5	1	0		48	0	0	0
		G	12	0	0	5	1	0	0	0	5	1	0		50	1	0	0
	RAIN	A	0	0	0	0	0	0	0	0	0	0	0		13	0	0	0
		B	3	0	0	0	2	0	0	0	0	1	0		20	0	0	0
		C	2	0	0	0	1	0	0	0	0	1	0		17	0	0	0
		D	9	0	0	2	2	1	0	0	2	1	1		28	0	0	0
		E	4	0	0	3	0	0	0	0	1	0	0		44	0	0	0
		F	12	0	0	5	3	0	0	0	3	1	0		21	0	0	0
		G	12	0	0	6	1	0	0	0	4	1	0		24	0	0	0
		A	2	0	0	0	0	1	0	0	0	1	0		14	0	0	0
		B	9	0	0	1	4	1	0	0	0	2	1		45	0	0	0
		C	0	0	3	2	1	0	0	0	5	0	1		30	0	0	0
		D	10	0	0	4	0	1	0	0	5	0	0		25	0	0	0
		E	12	0	0	4	2	1	0	0	3	1	1		25	0	0	0
		F	11	0	0	5	1	0	0	0	3	2	0		14	0	0	0
		G	8	0	0	2	2	0	0	0	2	2	0		27	0	0	0
	SUMMER	A	5	0	0	0	3	0	0	0	0	0	0		19	0	0	0
		B	15	0	0	5	4	0	0	0	3	3	0		52	2	2	0
		C	20	0	0	4	6	0	0	0	5	5	0		60	0	0	0
		D	18	1	0	4	4	2	1	0	3	3	0		60	0	0	0
		E	18	0	0	2	4	1	0	0	8	3	0		62	0	0	0
		F	16	0	0	5	5	0	0	0	4	2	0		57	0	0	0
		G	7	0	0	3	2	0	0	0	3	0	0		27	0	0	0
		A	8	0	0	2	3	1	0	0	1	1	0		31	0	1	0
		B	31	0	0	6	3	1	0	0	12	8	1		81	0	0	0
		C	9	0	0	2	3	0	0	0	2	2	0		57	0	0	0
		D	16	0	0	4	4	1	0	0	2	4	1		47	0	0	0
		E	20	0	1	6	4	0	0	1	6	2	0		65	0	0	0
		F	14	0	1	4	4	0	0	1	3	1	0		34	0	0	0
		G	12	0	0	8	1	0	0	0	3	0	0		52	2	0	0

PEDESTRIAN TRAFFIC - LISBOA SQUARE																
			MALE					FEMALE					TOTAL by path (*)			
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4
1WEEKEND	COLD	**A**	0	2	2	5	2	0	0	1	6	1	0	0	29	5
		B	0	2	5	7	1	0	2	6	10	2	0	0	39	7
		C	0	3	10	11	2	0	2	8	12	3	0	0	38	15
		D	0	0	1	5	3	0	0	0	5	2	0	0	33	7
		E	0	3	3	6	2	1	0	5	8	1	0	0	26	12
		F	0	7	15	15	5	0	14	10	18	5	0	0	73	30
		G	0	2	43	10	0	1	3	48	10	0	0	0	79	42
		A	0	0	1	3	2	0	0	2	2	1	0	0	15	0
		B	0	0	3	6	3	0	0	2	7	2	0	0	32	6
		C	0	3	1	4	3	0	2	5	6	2	0	0	31	11
		D	1	3	11	5	1	2	3	6	6	1	0	0	38	13
		E	0	1	8	8	1	0	2	11	8	2	0	0	39	15
		F	2	5	12	20	4	1	5	11	16	2	0	0	99	27
		G	0	0	31	14	0	0	0	41	7	0	0	0	70	34
	RAIN	**A**	0	0	1	1	0	0	0	0	2	0	0	0	5	0
		B	0	0	2	0	0	0	0	2	1	0	0	0	8	2
		C	1	1	3	6	3	0	0	4	6	4	0	0	38	5
		D	1	0	4	3	0	1	0	6	2	0	0	0	21	5
		E	0	0	2	1	0	0	0	2	2	0	0	0	11	3
		F	0	3	10	10	2	0	2	3	9	1	0	0	32	17
		G	0	1	5	3	0	0	0	3	2	0	0	0	12	4
		A	0	0	2	3	2	0	0	2	2	1	0	0	14	0
		B	0	1	1	3	1	1	0	0	1	1	0	0	12	2
		C	2	0	3	10	10	1	0	3	12	7	0	0	39	17
		D	3	5	6	12	3	2	3	10	12	5	0	0	44	20
		E	1	1	23	12	7	2	2	17	13	7	0	0	87	25
		F	1	6	20	25	8	1	10	30	20	7	0	0	99	32
		G	0	3	18	8	1	0	1	11	6	0	0	0	23	54
	SUMMER	**A**	0	0	2	3	1	0	0	3	1	1	0	0	12	3
		B	1	0	5	8	1	1	0	1	5	0	0	0	43	10
		C	0	0	4	8	4	1	1	3	7	2	0	0	39	8
		D	1	2	7	10	5	2	0	7	8	6	0	0	39	15
		E	1	1	5	5	0	0	0	8	5	0	0	0	29	12
		F	0	1	10	10	3	0	3	15	15	3	0	0	45	23
		G	0	3	15	5	5	0	2	10	5	5	0	0	38	25
		A	0	0	1	4	3	0	0	1	2	1	0	0	14	3
		B	0	1	3	5	1	0	1	7	3	1	0	0	21	4
		C	0	1	3	3	0	0	0	2	3	0	0	0	12	5
		D	0	2	6	3	2	1	0	3	4	2	0	0	23	5
		E	1	1	4	4	2	1	0	3	3	1	0	0	18	9
		F	0	0	2	5	1	0	0	3	4	1	0	0	18	7
		G	2	0	7	10	0	1	0	5	15	0	0	0	44	13

(*) includes static use that follows a given pedestrian path

USE PATTERNS - LISBOA SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	**A**	2	2	0	0	0	2	0	3	6,5	0	0	0	10	0
		B	16	0	0	0	0	3	0	1,7	0	0	0	0	10	0
		C	20	0	0	0	0	4	0	2	0	0	0	0	10	0
		D	20	3	2	0	0	4	0	1	1,33	4	0	0	10	0
		E	7	2	0	0	0	11	0	2	2	0	0	0	8,1	0
		F	14	0	0	0	0	7	0	1	0	0	0	0	10	0
		G	2	15	0	0	0	6	0	2	2,67	0	0	0	9,33	0
		A	4	0	0	0	0	0	0	1	0	0	0	0	0	0
		B	10	5	0	0	0	3	0	2	1	0	0	0	10	0
		C	12	0	0	0	0	8	0	1	0	0	0	0	6,5	0
		D	4	1	7	0	0	9	0	3	4	5	0	0	7,78	0
		E	12	0	0	0	1	10	0	2,75	0	0	0	2	9,2	0
		F	22	5	0	0	0	18	1	1	1,8	0	0	0	10	5
		G	0	10	1	0	0	18	0	0	3	1	0	0	10	0
	RAIN	**A**	0	0	0	1	0	0	0	0	0	0	1	0	0	0
		B	0	9	0	0	0	3	0	0	8,22	0	0	0	10	0
		C	13	2	0	0	0	2	0	2,77	3	0	0	0	5	0
		D	9	0	0	0	0	3	0	1	0	0	0	0	10	0
		E	5	1	0	0	0	1	1	2	3	0	0	0	5	2
		F	4	2	0	0	0	6	1	1	3	0	0	0	8,33	5
		G	2	0	0	0	0	4	0	2	0	0	0	0	10	0
		A	2	0	0	0	0	0	0	1	0	0	0	0	0	0
		B	2	2	0	0	0	1	1	2	2	0	0	0	10	4
		C	2	5	0	0	0	4	1	1	5,4	0	0	0	10	4
		D	0	3	0	0	0	8	0	0	4,33	0	0	0	9,25	0
		E	0	27	0	0	0	10	0	0	7,11	0	0	0	10	0
		F	0	4	0	0	0	9	1	0	7,25	0	0	0	8,89	10
		G	0	5	0	0	0	12	0	0	4,4	0	0	0	8,67	0
	SUMMER	**A**	2	2	0	0	0	7	0	1,67	1	0	0	0	4,58	0
		B	25	8	0	0	0	4	0	1	6,63	0	0	0	10	0
		C	8	9	0	0	0	29	0	2	4,44	0	0	0	10	0
		D	4	2	0	0	0	13	0	1	2	0	0	0	10	0
		E	8	6	0	0	0	12	0	2	3	0	0	0	8,75	0
		F	1	7	0	0	0	13	0	2	3,58	0	0	0	10	0
		G	4	4	0	0	0	34	0	2	2,5	0	0	0	9,18	0
		A	1	1	0	0	0	5	0	1	4	0	0	0	8,8	0
		B	0	2	0	0	0	1	0	0	3	0	0	0	5	0
		C	4	0	0	0	0	15	0	2	0	0	0	0	4,33	0
		D	0	3	0	0	0	3	2	0	2,67	0	0	0	10	2
		E	3	2	2	0	0	4	0	1	3	5	0	0	10	0
		F	5	3	1	0	0	3	0	1	5	5	0	0	6,67	0
		G	6	11	0	0	0	22	0	2	2	0	0	0	9,55	0

NUMBER OF USERS - LISBOA SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE				MALE					FEMALE					RACE				
			TOTAL	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEKEND	COLD	A	6	0	0	0	3	1	0	0	0	1	1	32	0	0	0
		B	19	0	0	4	4	2	0	0	4	3	2	49	0	5	0
		C	24	0	0	2	0	0	0	0	2	0	0	55	0	0	0
		D	29	0	0	2	10	3	0	0	2	10	2	44	0	0	0
		E	20	0	2	5	4	1	0	0	5	3	0	44	2	0	0
		F	21	0	0	3	2	4	0	0	2	1	2	108	2	0	0
		G	23	0	0	8	3	1	0	0	9	2	0	121	2	0	0
		A	4	0	0	0	2	0	0	0	0	2	0	11	0	0	0
		B	18	2	1	1	4	3	0	0	2	3	2	39	0	2	0
		C	20	0	0	3	10	0	0	0	1	6	0	46	0	0	0
		D	21	0	3	0	2	2	0	4	7	1	2	56	0	0	0
		E	23	1	2	4	4	2	0	2	2	3	3	64	0	0	0
		F	46	0	1	12	10	3	0	2	9	7	2	136	3	5	0
		G	29	0	0	10	3	0	0	0	11	5	0	122	0	0	0
	RAIN	A	1	0	0	0	1	0	0	0	0	1	0	5	0	0	0
		B	12	0	0	3	2	1	0	0	3	2	1	17	0	0	0
		C	17	2	0	2	2	4	0	0	1	2	4	45	2	0	0
		D	12	0	0	2	1	2	0	0	3	1	3	29	0	0	0
		E	8	0	0	2	1	1	0	0	2	1	1	15	0	0	0
		F	13	0	0	5	3	0	0	0	3	2	0	50	0	3	0
		G	6	0	0	2	1	0	0	0	2	1	0	20	0	0	0
		A	2	0	0	0	1	0	0	0	0	1	0	14	0	0	0
		B	6	0	0	1	2	1	0	0	0	1	1	15	0	0	0
		C	12	0	0	2	4	2	0	0	1	3	0	55	3	2	0
		D	11	0	1	2	3	0	0	0	1	4	0	77	0	0	0
		E	37	0	0	10	9	0	0	0	6	11	0	113	0	3	0
		F	14	0	0	6	2	0	0	0	3	3	0	138	1	3	0
		G	17	0	0	5	4	0	0	0	6	2	0	65	0	0	0
	SUMMER	A	11	0	0	2	3	1	0	0	1	3	0	21	0	0	0
		B	37	0	3	5	7	3	0	8	4	66	1	59	0	0	0
		C	46	2	2	9	10	3	1	1	6	9	3	76	0	0	0
		D	19	0	0	1	2	2	0	0	5	7	2	65	2	0	0
		E	26	0	1	7	5	1	0	1	6	5	0	51	0	0	0
		F	21	0	0	5	5	0	0	0	8	3	0	81	0	0	0
		G	42	0	0	14	10	0	0	0	12	6	0	90	2	0	0
		A	7	0	0	1	2	0	0	0	2	2	0	19	0	0	0
		B	3	0	0	0	0	0	0	0	2	1	0	25	0	0	0
		C	19	0	0	4	4	0	0	0	3	2	0	25	0	0	0
		D	8	0	0	5	1	0	0	0	2	0	0	29	2	0	0
		E	11	0	0	4	3	0	0	0	1	3	0	31	0	0	0
		F	12	0	0	4	3	0	0	0	3	2	0	27	1	0	0
		G	39	0	2	13	6	0	0	2	13	3	0	75	4	0	0

A 3.5. TIMES SQUARE

PEDESTRIAN TRAFFIC - TIMES SQUARE																		
			MALE					FEMALE					TOTAL by path (*)					
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6
WEEK	COLD	**A**	1	0	19	9	1	2	0	5	15	0	2	9	1	41	1	0
		B	7	0	8	17	1	10	0	5	22	1	11	19	4	34	3	5
		C	6	0	12	20	2	6	0	15	22	1	8	8	6	38	8	17
		D	5	0	18	24	5	5	0	13	24	2	4	16	4	61	11	0
		E	5	17	24	29	4	10	20	10	22	2	13	0	2	112	1	18
		F	6	5	24	16	4	5	4	16	14	2	3	12	2	65	17	0
		G	0	2	9	9	0	0	0	6	3	0	0	2	3	26	0	0
		A	9	1	20	23	0	6	2	21	20	2	12	21	1	47	20	4
		B	1	3	24	17	2	1	7	23	23	1	7	7	0	84	2	2
		C	1	6	53	22	2	1	9	27	8	2	14	7	3	109	0	3
		D	1	3	34	18	2	0	11	27	14	2	1	2	1	104	2	4
		E	1	7	47	36	1	0	11	45	33	1	5	0	1	181	0	0
		F	0	0	21	12	0	0	0	18	9	0	0	0	0	61	0	0
		G	0	0	3	11	3	0	0	2	10	1	0	4	0	26	0	0
	RAIN	**A**	0	0	25	13	2	0	0	20	7	1	5	6	3	55	0	0
		B	3	0	19	11	5		0	19	12	4	4	2	1	70	0	0
		C	6	2	28	15	0	6	3	28	16	0	0	0	0	94	0	15
		D	4	0	28	22	3	4	0	30	19	3	4	11	1	98	4	0
		E	2	12	43	27	3	3	8	52	20	2	0	7	0	168	0	0
		F	0	2	27	35	6	1	1	18	18	4	7	3	2	101	0	0
		G	0	0	10	7	0	0	0	0	3	0	0	3	17	0	0	0
		A	2	3	28	16	1	3	7	15	12	1	7	0	5	71	7	0
		B	0	7	25	16	3	0	10	12	15	0	14	7	2	65	0	3
		C	0	7	25	16	3	0	10	12	15	0	14	7	2	65	0	3
		D	2	7	27	21	3	1	4	18	15	1	3	2	0	91	0	4
		E	0	50	24	10	3	0	40	19	12	2	15	0	2	146	0	0
		F	0	40	10	8	1	0	34	12	10	0	4	6	2	103	0	0
		G	0	0	12	2	0	0	0	3	1	0	0	0	0	22	0	0
	SUMMER	**A**	12	7	25	14	3	8	8	18	13	2	7	18	4	80	5	3
		B	1	1	33	15	0	0	8	18	20	0	17	4	2	72	2	4
		C	1	4	60	45	3	2	10	33	18	2	34	10	4	138	3	3
		D	8	4	35	13	1	5	10	23	16	0	5	0	0	99	0	15
		E	0	4	36	23	1	0	8	33	20	1	13	3	4	87	10	10
		F	1	4	29	15	2	1	3	25	9	0	0	2	0	67	3	0
		G	0	0	7	14	1	0	0	3	12	0	0	0	0	37	0	0
		A	0	2	18	16	2	1	6	18	17	0	10	1	4	63	2	3
		B	2	5	20	11	1	1	5	10	10	2	3	7	0	49	10	5
		C	3	10	70	32	1	3	9	49	27	2	24	3	4	172	15	1
		D	3	4	27	15	1	3	2	16	14	1	14	4	1	65	9	5
		E	7	12	32	35	4	5	13	30	20	3	7	10	3	128	2	15
		F	4	4	17	27	3	4	5	16	27	2	0	8	0	95	2	12
		G	0	0	9	12	0	0	0	4	8	0	0	6	0	28	0	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - TIMES SQUARE																
			Number of users							Time spent (av.)						
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
00WEEK	COLD	**A**	0	2	0	0	0	0	0	0	1	0	0	0	0	0
		B	0	5	0	0	0	0	0	0	1	0	0	0	0	0
		C	0	0	1	0	0	0	0	0	0	5	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	2	2	6	0	0	2	0	0	5	1,5	4,83	0	0	5
		F	0	0	3	0	0	0	0	0	0	2,67	0	0	0	0
		G	0	2	0	0	0	0	0	0	2	0	0	0	0	0
		A	0	1	0	0	0	2	0	0	1	0	0	0	3	0
		B	0	1	1	0	0	0	0	0	2	2	0	0	0	0
		C	0	0	2	0	1	3	0	0	0	3	0	1	5,33	0
		D	0	2	0	0	0	0	0	0	3	0	0	0	0	0
		E	0	1	4	0	0	0	0	0	1	4,25	0	0	0	0
		F	0	0	4	0	0	0	0	0	0	8,25	0	0	0	0
		G	0	2	1	0	0	0	0	0	2	1	0	0	0	0
	RAIN	**A**	0	1	0	0	0	0	0	0	5	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	5	0	0	0	0	0	0	1	0	0	0	0	0
		D	0	5	0	0	0	0	0	0	1	0	0	0	0	0
		E	0	3	0	0	0	0	0	0	3	0	0	0	0	0
		F	0	3	0	0	0	0	0	0	3	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	2	0	0	0	0	0	0	2	0	0	0	0	0
		B	0	4	0	0	0	1	0	0	4	0	0	0	1	0
		C	0	0	2	0	0	3	0	0	0	7	0	0	6,67	0
		D	0	0	0	0	0	2	1	0	0	0	0	0	10	3
		E	0	4	0	0	0	0	0	0	3,25	0	0	0	0	0
		F	0	0	4	0	0	4	0	0	0	10	0	0	10	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUMMER	**A**	0	5	7	0	0	0	0	0	2	3,86	0	0	0	0
		B	0	1	4	0	0	11	0	0	1	4,5	0	0	9,64	0
		C	1	2	11	0	0	40	0	2	3	9,54	0	0	9,55	0
		D	2	0	8	0	0	14	0	2	0	6,25	0	0	10	0
		E	0	0	9	0	0	33	0	0	0	9,78	0	0	9,64	0
		F	0	5	1	0	0	31	0	0	2,4	5	0	0	10	0
		G	0	2	0	0	0	0	0	0	2	0	0	0	0	0
		A	0	1	5	0	0	0	0	0	1	7,6	0	0	0	0
		B	0	0	6	0	0	2	1	0	0	4,67	0	0	7	1
		C	0	4	7	0	0	24	1	0	3	4,57	0	0	9	3
		D	0	2	6	0	0	15	1	0	3,5	5	0	0	7,33	2
		E	0	2	5	0	0	37	0	0	3	8,8	0	0	9,19	0
		F	4	2	4	0	1	71	1	2	1	8	0	3	10	10
		G	2	0	0	0	0	14	0	1	0	0	0	0	10	0

NUMBER OF USERS - TIMES SQUARE																			
			USE												PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE						RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY		WHITE	BLACK	ASIAN	OTHER
WEEK	COLD	**A**	2	0	0	0	0	2	0	0	0	0	0		52	2	0	0
		B	5	0	0	0	0	1	2	0	0	2	0		72	3	1	0
		C	1	0	0	0	0	0	0	0	0	1	0		78	3	4	0
		D	0	0	0	0	0	0	0	0	0	0	0		92	3	1	0
		E	12	0	0	5	5	0	0	0	1	1	0		144	6	2	0
		F	3	0	1	1	0	0	0	1	0	0	0		92	4	3	0
		G	2	0	0	0	1	0	0	0	0	1	0		31	0	0	0
		A	3	0	0	2	0	0	0	0	0	1	0		100	3	1	3
		B	1	0	0	0	0	0	0	0	0	1	0		63	2	5	0
		C	6	0	0	1	1	1	0	0	0	2	1		131	4	2	0
		D	2	0	0	1	0	0	0	0	0	1	0		102	5	4	4
		E	5	0	0	2	1	0	0	0	1	1	0		174	5	4	4
		F	4	0	0	2	1	0	0	0	1	0	0		64	0	0	0
		G	3	0	0	3	0	0	0	0	0	0	0		33	0	0	0
	RAIN	**A**	1	0	0	1	0	0	0	0	0	0	0		66	1	2	0
		B	0	0	0	0	0	0	0	0	0	0	0		73	3	1	0
		C	5	0	0	0	2	0	0	0	0	3	0		109	0	0	0
		D	5	1	0	0	0	0	2	0	0	2	0		112	4	1	1
		E	3	0	0	3	0	0	0	0	0	0	0		165	2	5	3
		F	3	0	0	3	0	0	0	0	0	0	0		109	4	2	0
		G	0	0	0	0	0	0	0	0	0	0	0		20	0	0	0
		A	2	0	0	0	1	0	0	0	0	1	0		88	1	1	0
		B	5	0	0	3	0	0	0	0	2	0	0		54	3	3	0
		C	5	0	0	4	0	0	0	0	1	0	0		93	0	0	0
		D	3	0	0	2	0	0	0	0	1	0	0		92	3	5	2
		E	4	0	0	0	4	0	0	0	0	0	0		157	4	3	0
		F	8	0	0	0	8	0	0	0	0	0	0		113	2	5	3
		G	0	0	0	0	0	0	0	0	0	0	0		16	0	2	0
	SUMMER	**A**	12	0	0	3	4	0	0	0	2	3	0		111	3	4	4
		B	16	0	0	4	3	0	0	0	3	6	0		110	0	1	1
		C	54	0	0	10	20	2	0	0	2	20	0		226	3	3	0
		D	24	0	0	11	2	0	0	0	10	1	0		128	4	4	3
		E	42	0	1	11	12	0	0	0	10	8	0		161	1	2	4
		F	37	0	0	4	17	0	0	0	2	14	0		89	3	2	4
		G	2	0	0	0	2	0	0	0	0	0	0		37	2	0	0
		A	6	0	0	2	3	1	0	0	0	0	0		81	4	1	0
		B	9	0	0	4	3	1	0	0	1	0	0		75	1	0	0
		C	36	0	1	15	5	1	0	1	10	3	0		233	3	3	3
		D	24	0	0	7	5	0	0	0	6	6	0		97	2	2	3
		E	44	0	0	9	11	0	0	1	8	15	0		198	2	3	2
		F	83	2	2	19	21	0	0	0	19	20	0		181	4	0	7
		G	16	0	0	0	9	0	0	0	0	7	0		44	1	4	0

PEDESTRIAN TRAFFIC - TIMES SQUARE																		
			MALE					FEMALE					TOTAL by path (*)					
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6
WEEKEND	COLD	**A**	1	0	8	5	2	0	0	1	6	0	0	0	0	31	0	0
		B	1	0	13	12	3	0	0	1	7	0	0	0	0	30	3	7
		C	0	1	30	12	3	0	2	3	5	2	0	1	0	58	0	0
		D	9	2	8	28	5	9	0	9	16	4	1	12	0	72	3	0
		E	5	0	12	12	7	4	0	8	11	7	1	17	0	40	15	0
		F	3	0	14	19	3	4	2	11	8	2	0	11	0	51	9	2
		G	0	1	6	22	6	0	0	7	28	5	0	10	0	65	0	0
		A	1	3	16	16	4	0	0	3	4	3	0	0	0	59	0	0
		B	8	0	28	18	1	6	0	6	15	3	0	20	0	62	1	6
		C	3	1	17	21	1	1	0	7	11	3	0	6	0	58	0	2
		D	3	0	14	26	4	2	0	8	16	8	1	19	0	61	0	3
		E	1	10	23	22	6	2	3	17	21	3	0	6	0	99	3	5
		F	2	3	10	12	3	0	3	14	22	2	0	0	0	71	0	0
		G	0	0	20	10	0	0	0	10	10	0	0	0	0	50	0	0
	1RAIN	**A**	0	0	1	6	1	0	0	0	4	1	0	1	0	12	0	0
		B	0	0	3	10	2	0	0	2	13	1	0	0	0	31	0	0
		C	0	0	3	9	2	0	0	4	8	3	0	2	0	14	0	13
		D	0	0	3	9	3	0	0	2	8	2	0	0	0	17	2	8
		E	3	2	17	13	3	4	1	15	10	2	0	0	0	52	0	18
		F	0	0	15	10	1	0	0	20	0	2	0	3	0	48	0	0
		G	0	0	10	7	0	0	0	2	4	0	0	7	0	16	0	0
		A	0	0	3	12	0	0	0	3	10	0	0	0	0	28	0	0
		B	7	0	17	28	10	4	0	13	25	7	2	0	0	59	15	35
		C	7	2	10	26	3	10	3	3	24	5	0	6	0	42	8	37
		D	4	1	5	15	7	3	0	5	10	5	0	5	0	37	10	3
		E	7	3	22	20	6	2	1	17	169	3	0	5	0	82	2	10
		F	0	1	5	20	2	0	0	5	20	0	0	11	0	44	0	0
		G	0	0	13	7	0	0	0	17	11	0	0	12	0	36	0	0
	SUMMER	**A**	0	0	11	19	1	0	0	2	9	1	0	3	0	36	0	4
		B	2	0	15	20	1	1	3	12	11	0	0	13	0	54	0	0
		C	4	3	8	14	4	3	3	2	11	4	0	8	0	40	3	8
		D	4	1	8	12	3	5	0	4	16	2	0	2	0	41	10	9
		E	2	3	21	15	3	1	4	16	13	2	0	0	0	75	4	8
		F	0	0	5	5	0	0	0	3	5	0	0	4	0	16	0	0
		G	0	1	6	22	6	0	0	7	28	5	0	10	0	65	0	0
		A	1	0	17	11	2	0	0	4	8	1	0	3	0	41	3	0
		B	5	2	22	14	3	5	3	12	15	2	1	7	0	72	3	5
		C	6	4	20	24	8	6	2	14	21	3	0	4	0	81	13	17
		D	8	3	39	33	9	7	4	23	27	10	0	8	0	126	11	22
		E	0	0	17	19	1	0	0	14	20	2	0	22	0	50	7	5
		F	2	3	24	31	2	0	0	25	14	2	0	2	0	105	2	3
		G	0	0	3	10	0	0	0	9	2	0	0	0	0	24	0	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - TIMES SQUARE																
			Number of users							Time spent (av.)						
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	**A**	7	0	0	0	1	0	0	1	0	0	0	1	0	0
		B	1	3	2	0	0	0	0	4	2	2	0	0	0	0
		C	0	1	0	0	0	0	0	0	1	0	0	0	0	0
		D	2	0	4	0	0	0	1	1	0	7,75	0	0	0	5
		E	4	2	1	0	0	0	0	1	2	6	0	0	0	0
		F	3	2	1	0	0	0	1	2,67	3	3	0	0	0	3
		G	0	5	0	0	0	0	0	0	2	0	0	0	0	0
		A	3	9	3	0	0	0	0	1,67	3,67	5,67	0	0	0	0
		B	0	3	2	0	0	0	0	0	4	2,5	0	0	0	0
		C	1	0	0	0	0	5	0	2	0	0	0	0	7	0
		D	0	2	5	0	0	10	0	0	10	5	0	0	10	0
		E	3	0	2	0	0	21	0	3	0	5	0	0	10	0
		F	4	0	0	0	0	13	0	10	0	0	0	0	10	0
		G	0	6	0	0	0	0	0	0	3	0	0	0	0	0
	RAIN	**A**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	2	0	0	0	0	0	0	1	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		F	0	4	0	0	0	0	0	0	3,5	0	0	0	0	0
		G	0	3	0	0	0	0	0	0	2	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	0	2	0	0	0	0	0	0	3	0	0	0	0	0
		F	0	8	0	0	0	0	0	0	3,75	0	0	0	0	0
		G	0	5	0	0	0	3	0	0	3,8	0	0	0	10	0
	SUMMER	**A**	0	3	0	0	0	0	0	0	1	0	0	0	0	0
		B	0	5	0	0	0	1	1	0	1	0	0	0	5	5
		C	3	0	8	0	0	8	0	4	0	7,5	0	0	10	0
		D	0	4	7	0	0	9	0	0	1	5,14	0	0	10	0
		E	3	2	7	0	0	59	0	1	5	8	0	0	10	0
		F	0	0	0	0	2	45	0	0	0	0	0	1	9	0
		G	0	6	6	0	0	0	0	0	2	3	0	0	0	0
		A	1	2	4	0	0	0	0	2	1	6,5	0	0	0	0
		B	3	5	1	0	0	2	0	2	1	3	0	0	10	0
		C	0	3	2	0	2	33	0	0	3	8	0	1	8,84	0
		D	0	2	14	0	0	96	0	0	4	7	0	0	9,62	0
		E	0	4	8	0	0	74	1	0	2,5	3,5	0	0	10	5
		F	0	6	9	0	1	72	0	0	1,67	7	0	10	9,97	0
		G	0	6	0	0	0	12	0	0	3	0	0	0	10	0

NUMBER OF USERS - TIMES SQUARE																			
			USE												PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE						RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY		WHITE	BLACK	ASIAN	OTHER
WEEKEND	COLD	A	8	0	0	1	7	0	0	0	0	0	0		30	1	0	0
		B	6	0	0	0	3	2	0	0	0	1	0		41	0	2	0
		C	1	0	0	0	0	1	0	0	0	0	0		55	2	0	0
		D	7	0	0	1	5	0	0	0	0	1	0		84	3	3	2
		E	7	0	0	2	2	0	0	0	1	2	0		64	3	6	0
		F	7	0	0	4	2	0	0	0	1	0	0		70	1	2	0
		G	5	0	0	3	0	0	0	0	2	0	0		77	2	1	0
		A	15	0	0	1	4	0	0	0	0	6	4		63	0	2	0
		B	5	0	0	2	3	0	0	0	0	0	0		84	1	3	2
		C	6	0	0	3	1	0	0	0	2	0	0		64	1	5	1
		D	17	0	0	3	6	0	0	0	4	4	0		89	3	4	0
		E	26	0	0	2	13	0	0	0	1	10	0		127	2	3	2
		F	17	0	0	2	5	0	0	0	2	8	0		85	1	3	0
		G	6	0	0	0	0	3	0	0	0	3	0		56	0	0	0
	RAIN	A	0	0	0	0	0	0	0	0	0	0	0		13	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		31	0	0	0
		C	2	0	0	0	1	0	0	0	0	1	0		27	2	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		27	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0		70	0	0	0
		F	4	0	0	3	1	0	0	0	0	0	0		50	0	2	0
		G	3	0	0	3	0	0	0	0	0	0	0		23	2	1	0
		A	0	0	0	0	0	0	0	0	0	0	0		28	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		103	3	5	0
		C	0	0	0	0	0	0	0	0	0	0	0		88	3	2	0
		D	0	0	0	0	0	0	0	0	0	0	0		55	0	0	0
		E	2	0	0	2	0	0	0	0	0	0	0		91	6	2	0
		F	8	0	0	5	1	0	0	0	2	0	0		61	0	0	0
		G	8	0	0	4	1	0	0	0	3	0	0		56	0	0	0
	SUMMER	A	3	0	0	0	3	0	0	0	0	0	0		37	1	0	5
		B	7	0	0	1	5	0	0	0	0	1	0		61	2	2	2
		C	19	0	1	2	6	1	2	1	1	5	0		65	5	2	3
		D	20	0	0	0	5	2	2	0	0	9	2		66	2	2	0
		E	71	1	0	3	32	0	1	0	3	31	0		140	2	4	5
		F	47	0	0	15	15	0	0	0	13	4	0		61	3	1	0
		G	12	0	0	3	4	0	0	0	3	2	0		84	2	1	0
		A	7	1	0	1	3	0	0	0	1	0	1		40	1	2	1
		B	11	0	0	4	6	0	0	0	1	0	0		88	1	2	3
		C	40	2	1	7	10	3	3	1	4	9	0		146	1	1	0
		D	112	0	0	13	42	2	0	0	13	40	2		268	6	1	0
		E	87	0	0	16	24	0	0	0	18	29	0		156	2	2	0
		F	88	0	1	21	26	0	0	2	16	22	0		182	3	5	1
		G	18	0	0	3	6	0	0	0	5	4	0		41	1	0	0

A 3.6. WATERLOO SQUARE

PEDESTRIAN TRAFFIC - WATERLOO SQUARE																					
			MALE					FEMALE					TOTAL by path (*)								
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7	8	9
WEEK	COLD	**A**	3	0	4	4	2	0	0	1	5	1	5	6	0	0	0	0	0	2	7
		B	0	0	3	10	1	2	0	2	6	1	5	2	0	0	0	0	0	15	3
		C	1	0	0	7	1	0	1	2	3	1	2	4	2	0	0	0	0	5	5
		D	1	0	3	4	0	1	0	1	3	1	1	4	2	0	0	0	3	3	3
		E	0	0	2	2	0	0	1	1	1	0	0	4	0	0	0	0	1	2	0
		F	1	0	1	5	0	0	0	0	3	0	0	2	1	0	0	0	0	7	0
		G	0	0	4	8	1	0	0	0	4	1	0	2	0	0	0	2	0	14	0
		A	0	0	0	3	1	0	0	0	2	1	0	0	1	0	1	0	0	4	1
		B	0	0	0	3	1	0	1	0	3	0	2	1	0	0	0	0	0	5	0
		C	0	0	2	5	0	0	0	0	2	0	5	0	0	0	0	0	0	4	2
		D	0	0	2	5	1	0	0	3	2	1	0	4	0	0	0	0	2	8	0
		E	3	0	3	13	0	1	0	2	6	0	5	4	2	0	0	0	0	10	5
		F	0	0	4	11	0	0	0	2	7	0	0	10	0	0	0	0	0	13	1
		G	0	0	13	7	0	0	0	7	4	0	0	7	3	0	0	5	0	11	5
	RAIN	**A**	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0
		B	0	0	0	2	0	0	0	0	2	0	0	3	0	0	0	0	0	1	0
		C	0	0	3	4	0	0	0	4	4	0	0	5	3	7	0	0	0	0	0
		D	2	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	2	5	0
		E	0	3	0	1	0	0	0	0	1	0	0	2	0	0	1	0	0	2	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	6	0	0	0	0	0	0	0	3	0	0	0	0	0	2	1
		B	1	0	2	4	0	0	0	0	1	0	0	2	0	0	0	1	0	2	3
		C	2	0	1	4	0	0	0	1	1	0	1	0	0	0	0	0	2	3	3
		D	1	0	0	5	0	0	0	0	2	0	0	0	5	0	0	0	0	2	1
		E	0	0	0	2	2	0	0	0	0	0	0	2	0	0	0	0	0	2	0
		F	0	0	0	4	0	0	0	0	1	0	0	1	0	0	0	0	0	6	0
		G	0	0	2	4	2	0	0	0	3	3	0	0	1	0	0	2	0	10	1
	SUMMER	**A**	0	0	3	4	1	0	0	1	5	2	6	0	1	0	0	0	4	6	0
		B	0	0	2	7	0	0	0	1	4	0	6	2	0	0	0	0	4	5	0
		C	0	0	1	2	0	0	0	2	2	0	4	1	0	0	0	0	0	3	0
		D	0	1	4	2	0	0	0	1	2	0	7	0	0	0	0	0	3	2	0
		E	0	0	3	2	0	0	0	4	1	0	0	5	0	0	0	0	0	5	0
		F	0	0	0	5	0	0	3	0	6	0	3	1	0	0	0	0	3	7	0
		G	0	0	3	6	1	0	0	1	3	0	3	0	2	0	0	2	0	5	2
		A	0	0	1	8	0	0	0	5	10	0	5	1	0	0	1	0	0	14	2
		B	0	0	3	0	1	0	0	0	0	1	1	0	0	0	0	0	0	4	0
		C	0	0	2	3	0	0	0	0	3	0	2	1	0	0	0	0	1	3	1
		D	0	0	6	7	0	2	0	1	4	0	5	3	0	0	0	2	2	5	3
		E	0	0	4	5	1	0	0	3	4	0	6	1	4	0	0	0	0	5	1
		F	0	0	2	4	1	0	0	2	10	1	4	0	5	0	0	5	1	5	0
		G	1	0	0	6	0	0	0	0	2	0	1	0	0	0	0	0	0	8	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - WATERLOO SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEK	COLD	**A**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	2	0	0	0	0	0	0	1	0	0	0	0	0	0
		D	2	0	0	0	0	0	0	1	0	0	0	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	4	0	0	0	5	1	0	4,75	0	0	0	8,4	4
		D	0	0	0	0	0	3	0	0	0	0	0	0	6	0
		E	3	0	0	0	0	0	0	1	0	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RAIN	**A**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	1	0	0	0	0	0	0	1	0	0	0	0	0	0
		C	3	0	0	0	0	0	0	2,33	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		F	0	2	0	0	0	0	0	0	3	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUMMER	**A**	0	1	0	0	0	0	0	0	1	0	0	0	0	0
		B	0	2	2	0	0	0	1	0	3	4	0	0	0	5
		C	0	0	2	0	0	0	0	0	0	10	0	0	0	0
		D	0	0	5	0	0	1	0	0	0	5	0	0	5	0
		E	0	0	8	0	0	0	0	0	0	7,38	0	0	0	0
		F	0	1	0	2	0	0	0	0	3	0	1	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	1	0	1	0	0	0	0	1,67	0	5	0	0	0	0
		B	0	0	1	0	0	0	0	0	0	10	0	0	0	0
		C	0	0	1	0	0	0	0	0	0	8	0	0	0	0
		D	0	2	2	0	0	0	0	0	3	5	0	0	0	0
		E	0	2	4	0	3	3	0	0	5	8,75	0	10	3	0
		F	0	1	0	0	0	5	0	0	5	0	0	0	10	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NUMBER OF USERS - WATERLOO SQUARE																			
			USE												PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE						RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY		WHITE	BLACK	ASIAN	OTHER
WEEK	COLD	A	0	0	0	0	0	0	0	0	0	0	0		16	0	4	0
		B	0	0	0	0	0	0	0	0	0	0	0		23	1	1	0
		C	2	1	0	0	1	0	0	0	0	0	0		18	0	0	0
		D	2	0	0	0	0	0	1	0	0	1	0		14	2	0	0
		E	0	0	0	0	0	0	0	0	0	0	0		4	1	2	0
		F	0	0	0	0	0	0	0	0	0	0	0		10	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		18	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0		7	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		8	0	0	0
		C	10	0	0	3	7	0	0	0	0	0	0		21	0	0	0
		D	3	0	0	1	2	0	0	0	0	0	0		17	0	0	0
		E	3	2	0	0	1	0	0	0	0	0	0		26	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0		24	0	0	1
		G	0	0	0	0	0	0	0	0	0	0	0		28	0	3	0
	RAIN	A	0	0	0	0	0	0	0	0	0	0	0		2	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		4	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0		15	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		7	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0		5	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0		6	0	0	0
		B	1	0	0	0	1	0	0	0	0	0	0		9	0	0	0
		C	3	1	0	0	1	0	0	0	0	1	0		9	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		7	0	1	0
		E	0	0	0	0	0	0	0	0	0	0	0		7	0	0	0
		F	2	0	0	0	0	0	0	0	0	2	0		7	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		14	0	0	0
	SUMMER	A	1	0	0	1	0	0	0	0	0	0	0		16	0	1	0
		B	5	0	0	0	5	0	0	0	0	0	0		18	0	0	0
		C	2	0	0	0	0	0	0	0	2	0	0		10	0	0	0
		D	6	0	0	2	1	0	0	0	2	1	0		16	0	0	0
		E	8	0	0	4	0	0	0	0	4	0	0		18	0	0	0
		F	3	0	0	0	0	0	0	0	2	1	0		15	0	0	2
		G	0	0	0	0	0	0	0	0	0	0	0		14	0	0	0
		A	2	0	0	0	1	0	0	0	0	1	0		25	0	1	0
		B	1	0	0	0	0	0	0	0	0	1	0		5	0	0	1
		C	1	0	0	1	0	0	0	0	0	0	0		7	0	2	0
		D	4	0	0	0	2	0	0	0	0	2	0		21	0	0	0
		E	12	0	4	1	4	0	0	0	0	3	0		29	0	0	0
		F	6	0	0	1	3	0	0	0	0	2	0		26	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		9	0	0	0

PEDESTRIAN TRAFFIC - WATERLOO SQUARE																					
			MALE					FEMALE					TOTAL by path (*)								
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7	8	9
WEEKEND	COLD	**A**	0	0	0	2	1	0	0	0	0	0	2	2	0	0	0	0	0	0	0
		B	0	0	4	2	1	0	0	0	0	1	0	0	0	0	0	0	0	7	1
		C	0	0	2	5	1	0	0	1	3	0	0	4	0	0	0	0	0	6	2
		D	0	0	0	8	0	0	0	0	6	0	2	0	0	0	0	2	0	10	2
		E	3	0	1	10	0	1	0	4	7	2	0	0	8	2	0	0	0	17	3
		F	0	0	0	7	0	0	0	0	6	0	2	0	0	0	0	3	0	9	0
		G	0	0	1	3	0	2	0	0	4	0	0	4	0	0	0	7	0	6	0
		A	1	0	1	2	1	1	1	1	3	0	1	2	1	0	0	0	0	6	2
		B	0	0	5	1	0	0	0	2	0	0	4	3	0	0	0	0	0	1	0
		C	0	0	3	4	1	1	0	4	2	1	4	1	3	0	0	0	0	6	3
		D	2	0	4	3	1	0	0	1	3	0	0	6	1	0	0	1	0	6	0
		E	0	1	11	3	0	0	0	3	3	0	9	12	0	0	0	0	0	2	1
		F	0	0	3	4	1	0	0	2	5	0	0	5	0	0	0	0	0	7	3
		G	0	0	10	21	0	0	0	8	13	0	0	10	0	0	0	12	0	30	0
	RAIN	**A**	0	0	0	3	0	0	0	0	2	0	5	0	0	0	0	0	0	0	0
		B	1	0	2	5	0	0	0	0	2	1	3	2	0	0	1	0	0	5	0
		C	1	0	0	5	0	1	0	0	4	0	4	3	0	0	0	0	0	4	0
		D	0	0	1	3	1	0	0	0	2	0	3	1	0	0	0	0	0	4	0
		E	0	0	1	8	5	0	0	1	7	5	10	0	0	0	0	0	0	15	2
		F	0	1	5	13	1	0	0	4	8	1	15	0	0	0	0	6	0	10	8
		G	0	0	1	4	0	0	0	0	5	0	2	0	0	0	0	3	0	5	0
		A	0	0	0	5	0	0	0	0	3	0	3	3	0	0	0	0	0	2	0
		B	0	0	2	6	2	0	0	0	2	0	3	0	2	0	0	0	0	5	2
		C	0	0	0	6	1	0	0	0	3	0	6	0	0	0	0	0	0	3	1
		D	0	0	1	7	1	0	0	0	2	0	2	0	2	0	0	4	0	4	0
		E	0	0	3	12	1	0	0	2	10	1	2	5	3	0	0	0	0	17	2
		F	0	0	1	12	1	0	0	0	7	0	0	0	2	0	0	8	0	12	0
		G	0	0	3	10	0	0	0	0	8	0	4	4	0	0	0	3	0	11	0
	SUMMER	**A**	0	0	0	5	2	0	0	0	3	1	5	1	0	0	0	0	0	10	0
		B	1	1	1	2	0	0	0	1	4	0	4	2	0	0	0	0	0	4	0
		C	0	0	2	3	0	0	0	0	2	0	2	0	0	0	0	0	0	5	0
		D	0	0	2	4	1	0	0	0	3	0	0	6	0	0	0	0	0	4	0
		E	0	0	3	2	0	0	0	0	1	0	4	0	0	0	0	0	0	2	0
		F	0	0	5	1	0	0	0	4	2	0	4	0	6	0	0	0	0	4	2
		G	0	0	3	8	0	0	0	2	6	0	6	1	0	0	0	2	0	9	1
		A	1	0	1	3	1	2	1	0	4	0	2	3	0	3	1	0	0	6	1
		B	1	2	4	8	2	0	1	2	6	1	9	6	2	2	0	0	0	8	0
		C	0	1	6	4	0	0	0	2	5	0	0	1	0	4	0	1	0	12	0
		D	3	0	1	2	1	0	0	1	4	1	8	0	1	0	0	0	4	0	0
		E	1	0	2	6	1	0	0	1	3	1	6	1	2	0	0	0	0	5	1
		F	0	3	5	5	1	0	0	2	5	1	2	8	0	0	0	0	4	8	0
		G	0	0	4	11	0	0	0	5	9	0	5	3	0	0	0	0	7	12	2

(*) includes static use that follows a given pedestrian path

USE PATTERNS - WATERLOO SQUARE																	
USE			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	**A**	1	0	0	0	0	0	0	2	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	2	0	0	0	0	0	0	2	0	0	0	0	0
		E	2	0	0	0	0	0	0	2	0	0	0	0	0	0
		F	0	0	1	0	0	0	0	0	0	3	0	0	0	0
		G	0	5	2	0	0	0	0	0	5	5	0	0	0	0
		A	0	0	0	1	0	0	0	0	0	0	1	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	2	0	1	0	0	0	0	5	0	5	0	0	0	0
		D	2	0	0	0	0	0	0	10	0	0	0	0	0	0
		E	3	0	0	0	0	0	0	2	0	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RAIN	**A**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		F	0	6	0	0	0	0	0	0	1	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	0	2	0	0	0	0	0	0	2	0	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	0	0	0	0	0	1	0	0	0	0	0	0	3
		E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		F	0	3	0	0	0	0	0	0	2,67	0	0	0	0	0
		G	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	SUMMER	**A**	0	5	0	0	0	0	0	0	8	0	0	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		F	4	0	0	0	0	0	0	2	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	3	0	1	0	0	0	0	3	0	6	0	0	0	0
		B	4	2	0	0	0	3	0	2	2	0	0	0	3	0
		C	3	0	8	0	0	0	0	3	0	6,88	0	0	0	0
		D	4	0	0	0	3	2	0	1,75	0	0	0	3	10	0
		E	0	0	1	0	1	0	0	0	0	10	0	1	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	1	0	0	0	0	0	0	2

NUMBER OF USERS - WATERLOO SQUARE																			
			USE												PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE						RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY		WHITE	BLACK	ASIAN	OTHER
WEEKEND	COLD	**A**	1	0	0	0	1	0	0	0	0	0	0		4	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		7	0	1	0
		C	0	0	0	0	0	0	0	0	0	0	0		11	0	1	0
		D	2	0	0	0	2	0	0	0	0	0	0		16	0	0	0
		E	2	1	0	0	1	0	0	0	0	0	0		30	0	0	0
		F	1	0	0	0	1	0	0	0	0	0	0		14	0	0	0
		G	7	0	0	0	3	0	2	0	0	2	0		17	1	0	0
		A	1	0	0	0	1	0	0	0	0	0	0		11	0	1	0
		B	0	0	0	0	0	0	0	0	0	0	0		6	0	2	0
		C	3	0	0	0	2	0	1	0	0	0	0		19	0	0	0
		D	2	0	0	0	2	0	0	0	0	0	0		13	0	3	0
		E	3	0	3	0	0	0	0	0	0	0	0		24	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0		15	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		50	2	0	0
	RAIN	**A**	0	0	0	0	0	0	0	0	0	0	0		5	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		11	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0		11	0	0	0
		D	0	0	0	0	0	0	0	0	0	0	0		8	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0		27	0	0	0
		F	6	0	0	2	4	0	0	0	0	0	0		39	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0		10	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0		8	0	0	0
		B	2	0	0	0	2	0	0	0	0	0	0		13	1	0	0
		C	0	0	0	0	0	0	0	0	0	0	0		10	0	0	0
		D	1	0	0	1	0	0	0	0	0	0	0		12	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0		27	1	1	0
		F	3	0	0	0	2	0	0	0	0	1	0		22	0	2	0
		G	1	0	0	0	1	0	0	0	0	0	0		20	2	0	0
	SUMMER	**A**	5	0	0	4	0	0	0	0	1	0	0		16	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0		10	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0		6	0	1	0
		D	0	0	0	0	0	0	0	0	0	0	0		10	0	0	0
		E	0	0	0	0	0	0	0	0	0	0	0		6	0	0	0
		F	4	0	0	0	2	0	0	0	0	2	0		12	0	0	4
		G	0	0	0	0	0	0	0	0	0	0	0		18	0	0	0
		A	4	1	0	0	1	0	1	0	0	1	0		15	2	0	0
		B	9	2	0	0	3	0	1	0	0	3	0		33	3	0	0
		C	11	2	0	4	1	0	1	0	1	2	0		29	0	0	0
		D	9	2	3	1	1	0	0	0	1	1	0		22	0	0	0
		E	2	0	0	1	1	0	0	0	0	0	0		17	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0		22	0	0	0
		G	1	0	0	0	1	0	0	0	0	0	0		28	3	0	0

A 3.7. OLD ELDON SQUARE

PEDESTRIAN TRAFFIC - OLD ELDON SQUARE																			
			MALE					FEMALE					TOTAL by path (*)						
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7
WEEK	COLD	**A**	4	0	14	35	26	2	0	12	44	35	147	0	28	0	3	5	9
		B	11	6	27	78	49	12	5	25	78	68	215	15	58	18	19	23	27
		C	7	13	35	101	59	9	17	30	92	97	268	16	77	0	22	22	35
		D	10	10	45	90	60	10	10	40	100	85	243	0	41	15	110	20	45
		E	1	60	120	50	40	2	65	140	40	30	289	52	176	20	45	6	25
		F	4	15	15	28	3	2	5	15	30	5	92	5	20	0	0	8	8
		G	2	2	16	5	0	0	1	9	5	0	42	0	2	0	0	0	0
	RAIN	**A**	1	3	32	45	7	0	4	24	35	5	79	11	37	2	23	5	9
		B	3	0	23	71	75	5	0	16	65	80	188	23	65	0	50	9	20
		C	5	6	70	120	100	3	3	50	120	80	308	47	102	0	50	15	50
		D	2	10	100	100	30	2	8	90	80	35	215	15	105	0	105	10	25
		E	3	12	77	63	14	2	13	70	62	12	124	50	100	0	17	10	41
		F	2	12	83	47	5	1	21	78	47	3	102	40	70	5	30	22	40
		G	0	0	13	40	8	0	0	5	20	7	82	0	15	0	0	6	0
	SUMMER	**A**	3	2	19	48	29	2	0	11	33	31	103	20	49	0	2	3	6
		B	0	0	18	68	43	0	0	18	66	59	163	30	70	0	1	3	9
		C	2	3	41	67	25	1	2	44	73	22	165	25	70	0	1	10	15
		D	3	10	90	71	43	4	10	68	63	27	226	62	88	0	0	13	10
		E	4	35	45	50	22	2	25	45	50	28	165	40	72	25	10	4	5
		F	1	3	46	52	13	0	8	33	44	11	118	10	59	7	12	12	11
		G	0	0	0	11	0	0	0	0	5	0	15	2	3	0	0	0	0
		A	2	1	16	35	29	2	2	28	33	23	80	12	20	15	30	2	3
		B	4	5	22	41	42	2	2	16	33	37	87	14	65	0	33	7	10
		C	2	20	100	70	80	1	21	29	63	98	320	34	114	0	98	20	29
		D	2	4	90	80	65	1	3	110	67	78	200	23	106	0	150	15	25
		E	1	24	60	120	20	2	23	60	80	15	209	20	80	5	60	10	30
		F	0	45	45	40	12	0	45	40	45	8	125	15	60	10	50	15	10
		G	0	6	25	8	2	0	5	20	6	1	35	10	10	4	12	2	0
		A	1	0	32	31	12	0	0	26	41	25	91	11	35	2	35	0	8
		B	0	0	60	120	40	0	0	40	120	40	197	30	62	10	110	4	12
		C	9	20	60	120	92	11	25	64	128	94	245	64	188	10	93	10	25
		D	2	40	70	160	35	1	38	74	150	40	308	21	125	6	124	10	25
		E	3	20	110	50	30	2	15	90	40	40	143	22	88	0	100	30	30
		F	4	8	150	44	31	2	6	130	45	29	268	22	77	0	60	10	20
		G	0	0	10	8	0	0	0	4	9	0	5	7	12	3	4	0	0
		A	1	0	31	41	22	0	1	15	40	33	100	15	41	9	28	0	10
		B	3	4	56	58	45	2	6	52	62	46	220	21	32	13	30	10	23
		C	5	10	94	150	40	6	9	89	155	52	238	52	91	40	152	12	33
		D	4	45	125	100	45	3	48	132	90	48	229	58	10	34	106	40	90
		E	0	55	74	105	20	0	60	70	90	21	230	47	108	40	60	12	25
		F	4	95	65	60	6	2	70	40	55	4	212	36	71	10	50	8	20
		G	0	0	8	6	1	0	0	4	14	0	10	5	14	3	6	0	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - OLD ELDON SQUARE																
			Number of users							Time spent (av.)						
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEK	COLD	**A**	0	5	5	0	0	10	1	0	2,8	4,8	0	0	7	10
		B	0	5	15	0	0	0	0	0	5,4	5,94	0	0	0	0
		C	0	15	14	0	0	15	0	0	5,33	4,64	0	0	9,73	0
		D	1	28	15	0	1	12	0	4	8	7,27	0	5	9,5	0
		E	2	15	100	0	0	35	0	10	6,53	5,42	0	0	10	0
		F	3	19	31	0	0	25	0	2	8,74	4,55	0	0	10	0
		G	0	7	8	0	2	0	0	0	8,58	7,62	0	5	0	0
		A	3	6	9	0	0	4	0	2	2,83	4,22	0	0	10	0
		B	0	3	18	0	0	10	0	0	2,33	6,67	0	0	8,8	0
		C	1	8	24	0	0	34	0	3	4,75	6,62	0	0	9,42	0
		D	4	11	61	0	0	21	0	3	4,64	7,59	0	0	9,88	0
		E	0	19	61	0	0	28	0	0	6,32	8,49	0	0	10	0
		F	0	20	39	0	0	0	0	0	6,5	10	0	0	0	0
		G	0	10	4	0	0	0	0	0	5	10	0	0	0	0
	RAIN	**A**	0	2	2	0	0	5	0	0	5	3	0	0	10	0
		B	0	4	3	0	0	2	0	0	4,5	5	0	0	10	0
		C	0	7	3	0	0	2	0	0	2,28	2	0	0	10	0
		D	2	2	15	0	0	2	1	4	6,5	6,87	0	0	10	3
		E	0	11	5	0	0	2	0	0	4,90	5,6	0	0	10	0
		F	2	13	9	0	0	4	0	3	4,08	6,11	0	0	10	0
		G	0	4	0	0	0	0	0	0	1,5	0	0	0	0	0
		A	0	5	7	1	0	3	1	0	6	5,57	1	0	8,33	3
		B	0	1	17	0	0	3	0	0	2	6,59	0	0	9,33	0
		C	0	10	35	0	0	51	0	0	6,6	5,29	0	0	8,43	0
		D	0	0	8	0	0	34	0	0	0	5	0	0	8,38	0
		E	0	4	5	0	0	15	0	0	2	3	0	0	10	0
		F	0	5	2	0	0	0	0	0	5	10	0	0	0	0
		G	0	9	8	0	0	0	0	0	4,67	5,25	0	0	0	0
	SUMMER	**A**	0	3	12	0	0	18	2	0	2	9,08	0	0	9,56	3,5
		B	1	0	62	0	0	30	1	10	0	8,73	0	0	10	10
		C	0	11	92	0	0	133	1	0	6,09	9,72	0	0	10	10
		D	0	1	166	0	0	115	0	0	10	10	0	0	10	0
		E	0	17	70	0	11	25	2	0	10	9,68	0	5,64	10	6
		F	0	10	129	0	0	51	0	0	10	10	0	0	10	0
		G	0	4	13	0	0	0	0	0	10	10	0	0	0	0
		A	2	7	21	0	0	24	0	1	2,29	7,57	0	0	9,54	0
		B	0	9	56	0	0	34	2	0	3,89	9,75	0	0	9,0	3,5
		C	0	4	58	0	2	133	0	0	6,25	9,91	0	5	9,96	0
		D	0	1	143	0	0	100	0	0	5	9,57	0	0	8,8	0
		E	0	16	167	0	6	22	0	0	6,38	9,87	0	2	9,09	0
		F	0	5	99	0	0	16	0	0	9,4	9,7	0	0	10	0
		G	1	5	26	0	5	2	0	2	5,8	10	0	3,6	10	0

NUMBER OF USERS - OLD ELDON SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE					RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEK	COLD	A	21	0	0	0	7	3	0	0	1	5	5	186	2	3	2
		B	20	0	1	3	78	2	0	1	2	3	1	362	3	7	7
		C	44	0	0	7	11	3	0	0	10	10	3	447	3	5	6
		D	57	0	10	11	11	2	0	5	7	10	1	454	20	17	13
		E	152	0	12	30	32	0	1	12	30	35	0	645	30	20	5
		F	78	0	35	13	3	0	2	15	6	4	0	191	2	7	0
		G	17	0	0	11	0	0	0	0	6	0	0	47	0	10	0
		A	22	0	010	6	0	0	0	0	1	4	1	173	2	3	0
		B	31	1	0	6	6	3	2	0	5	5	3	346	9	9	5
		C	67	0	0	7	15	10	0	0	8	18	9	613	5	6	0
		D	97	1	3	11	20	10	1	3	16	22	10	534	12	6	2
		E	108	0	15	18	14	6	0	17	17	14	7	419	7	10	7
		F	59	0	18	8	86	0	0	14	7	6	0	306	15	25	12
		G	14	0	0	10	0	0	0	0	4	0	0	100	7	0	0
	RAIN	A	9	0	0	1	6	0	0	0	0	2	0	174	1	5	7
		B	9	0	0	2	7	0	0	0	0	0	0	272	3	4	2
		C	12	0	0	3	8	0	0	0	0	1	0	278	4	0	10
		D	22	0	3	1	7	0	0	2	5	4	0	398	3	5	5
		E	18	0	5	5	3	0	0	2	3	0	0	302	12	10	6
		F	28	0	14	4	2	1	0	3	3	1	0	228	3	6	2
		G	4	0	0	2	2	0	0	0	0	0	0	20	0	0	0
		A	17	0	0	4	6	1	0	0	2	4	0	158	7	3	0
		B	21	0	0	1	6	4	0	0	2	5	3	207	5	8	5
		C	96	0	0	35	16	5	0	0	12	12	12	623	7	7	3
		D	42	0	0	9	140	2	0	0	9	10	2	522	4	6	10
		E	24	0	5	4	10	0	0	0	0	5	0	419	4	6	0
		F	7	0	2	5	0	0	0	0	0	0	0	277	4	6	0
		G	17	0	3	10	0	0	0	4	0	0	0	87	3	0	0
	SUMMER	A	35	0	0	2	9	8	0	0	2	7	7	191	3	7	2
		B	94	1	2	10	35	5	0	2	10	25	4	474	10	30	0
		C	237	1	11	30	67	8	1	10	31	62	16	825	12	20	3
		D	282	0	32	87	30	5	0	28	65	30	5	862	20	10	0
		E	125	0	27	20	20	3	0	16	27	10	2	513	10	2	0
		F	190	0	52	40	10	0	1	42	35	10	0	589	25	20	5
		G	17	0	8	2	0	0	0	5	2	0	0	41	4	3	0
		A	54	0	0	4	14	1	0	0	0	30	5	227	4	4	3
		B	101	0	1	15	25	10	0	2	6	28	14	425	3	7	0
		C	197	10	5	16	34	20	5	4	20	60	23	769	12	20	6
		D	247	0	5	55	50	5	0	7	58	60	7	849	12	20	6
		E	211	0	67	16	20	3	0	40	30	20	15	660	26	12	8
		F	120	0	47	15	10	2	0	25	15	5	1	504	7	7	3
		G	39	0	12	4	6	0	0	10	3	4	0	61	5	4	2

PEDESTRIAN TRAFFIC - OLD ELDON SQUARE																			
			MALE					FEMALE					TOTAL by path (*)						
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6	7
WEEKEND	COLD	A	1	0	6	14	3	1	2	10	16	3	15	4	20	1	14	3	4
		B	6	0	12	27	13	3	1	5	21	5	43	10	21	3	15	5	4
		C	3	11	56	100	71	2	7	53	106	64	235	17	114	13	50	10	45
		D	2	10	81	180	74	3	12	70	160	73	372	65	169	24	53	12	30
		E	6	42	95	58	27	3	23	90	47	38	266	24	87	10	49	20	12
		F	2	45	42	53	13	2	48	32	57	18	123	17	149	5	24	14	7
		G	0	18	26	12	0	0	15	27	13	0	66	5	30	0	10	0	0
	RAIN	A	1	1	5	38	31	5	5	9	42	43	135	15	7	0	23	4	11
		B	3	5	33	77	45	4	7	33	72	75	218	10	66	9	45	14	20
		C	0	20	54	110	65	0	10	40	100	70	187	25	106	20	90	10	50
		D	7	110	120	100	80	10	80	115	110	80	254	102	103	200	30	30	100
		E	0	30	70	125	20	0	40	65	100	10	174	11	151	10	80	20	25
		F	0	50	60	40	30	0	45	30	40	20	151	15	101	0	40	5	5
		G	0	0	15	12	2	0	0	4	10	2	5	21	28	0	0	0	0
	SUMMER	A	5	1	13	43	32	2	0	10	32	21	107	0	40	0	22	0	0
		B	3	7	40	40	10	2	5	33	20	13	130	8	12	8	3	5	10
		C	0	12	82	45	17	0	7	81	45	18	155	32	62	0	50	7	7
		D	2	6	95	76	20	1	2	80	81	14	348	8	8	1	0	8	11
		E	10	15	75	80	40	10	15	75	1140	20	136	0	180	10	40	32	60
		F	0	21	102	48	10	0	16	118	42	5	150	30	154	2	20	0	10
		G	0	1	3	3	0	0	0	1	1	0	7	2	3	0	0	0	0
		A	0	2	4	11	8	0	0	4	12	8	26	5	3	8	8	0	0
		B	1	4	18	47	12	0	2	17	22	12	91	3	17	17	8	0	0
		C	0	2	20	90	35	0	3	20	85	28	162	12	19	18	24	11	12
		D	0	0	40	106	71	0	0	42	94	48	243	40	80	8	12	6	14
		E	3	18	121	100	21	2	20	80	90	30	183	15	160	20	50	20	40
		F	0	25	160	70	4	0	20	92	62	2	183	21	190	15	30	0	0
		G	1	5	7	12	3	0	3	4	5	1	33	1	4	5	2	0	0
		A	0	0	14	12	6	0	0	5	10	3	16	14	23	2	2	0	0
		B	1	0	9	15	3	1	0	6	16	1	33	6	4	3	8	1	0
		C	0	27	50	100	42	0	38	40	90	48	188	51	102	5	50	15	30
		D	10	90	125	50	25	5	70	110	40	15	170	47	192	10	72	15	50
		E	2	40	100	50	25	3	50	125	40	20	243	23	92	3	82	12	20
		F	3	25	90	40	5	0	35	80	40	2	184	5	64	0	40	5	10
		G	0	2	13	12	2	0	4	13	7	0	53	0	0	0	0	0	0
		A	3	1	22	58	65	3	2	22	58	72	179	27	58	6	46	9	5
		B	7	20	100	70	80	7	20	62	92	82	200	70	104	30	70	30	50
		C	20	60	100	150	40	20	75	84	150	50	377	62	162	40	66	15	40
		D	6	40	142	180	32	8	30	98	220	36	322	109	130	21	140	32	70
		E	0	55	110	70	25	0	45	90	80	25	191	62	152	20	53	15	20
		F	5	65	85	70	5	5	65	80	65	5	138	52	152	30	64	20	10
		G	0	2	13	10	0	0	3	19	2	0	14	3	14	24	0	0	0

(*) includes static use that follows a given pedestrian path

NUMBER OF USERS - OLD ELDON SQUARE																
			Number of users							Time spent (av.)						
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	**A**	0	5	6	0	0	0	0	0	5,4	5,17	0	0	0	0
		B	3	3	8	0	0	9	0	2	2,67	4,25	0	0	9,11	0
		C	0	3	37	0	0	33	0	0	5	9,32	0	0	9,21	0
		D	0	16	88	0	0	30	0	0	5,06	6,48	0	0	10	0
		E	0	45	41	0	0	25	0	0	7,38	7,7	0	0	10	0
		F	1	26	14	0	0	0	0	2	6	6,07	0	0	0	0
		G	0	3	6	0	0	0	0	0	7	10	0	0	0	0
		A	2	2	18	0	0	9	0	3	3	4,5	0	0	9,22	0
		B	3	2	48	0	3	15	1	2	3	7,67	0	2	9,2	10
		C	0	11	38	0	3	33	1	0	7,72	7,28	0	4	9,76	10
		D	0	13	57	0	0	86	0	0	10	9,93	0	0	10	0
		E	0	41	159	0	3	50	0	0	9,27	9,44	0	10	8	0
		F	0	30	79	0	0	5	0	0	10	10	0	0	10	0
		G	0	11	6	0	1	0	0	0	5,63	7,5	0	5	0	0
	RAIN	**A**	0	6	0	0	0	0	1	0	1,17	0	0	0	0	3
		B	0	4	0	0	0	1	0	0	3,75	0	0	0	10	0
		C	0	6	8	0	0	1	0	0	6,67	5,25	0	0	10	0
		D	0	2	2	0	0	4	0	0	3,5	4	0	0	5,5	0
		E	0	36	53	0	0	30	0	0	7,75	9,72	0	0	10	0
		F	0	10	46	0	0	0	0	0	8,4	8,91	0	0	0	0
		G	0	7	0	0	0	0	0	0	7,86	0	0	0	0	0
		A	0	1	0	0	0	0	0	0	5	0	0	0	0	0
		B	0	0	2	0	0	0	0	0	0	6,5	0	0	0	0
		C	0	3	6	0	0	0	0	0	2,67	4,67	0	0	0	0
		D	0	4	0	0	0	4	0	0	3	0	0	0	10	0
		E	0	11	29	0	0	5	0	0	8,28	10	0	0	10	0
		F	0	15	23	0	0	0	0	0	7,69	10	0	0	0	0
		G	0	2	2	0	0	0	0	0	5	5	0	0	0	0
	SUMMER	**A**	1	40	17	1	0	0	0	2	10	6,36	1	0	0	0
		B	0	1	18	0	0	10	0	0	3	9,33	0	0	10	0
		C	2	1	52	0	0	31	0	5	10	9,71	0	0	10	0
		D	0	25	81	0	2	56	0	0	10	9,65	0	10	9,57	0
		E	3	3	128	0	0	34	0	2	3	10	0	0	10	0
		F	0	6	84	0	4	0	0	0	10	9,68	0	5	0	0
		G	0	3	16	0	0	0	0	0	10	9,75	0	0	0	0
		A	3	9	30	0	0	13	0	2,33	3	7,97	0	0	8,08	0
		B	1	11	75	0	0	41	0	10	3	9,89	0	0	8,29	0
		C	0	1	81	0	2	176	0	0	3	9,88	0	5	10	0
		D	2	37	108	0	0	164	0	2	9,03	9,15	0	0	9,85	0
		E	0	19	121	0	0	119	0	0	6,47	9,35	0	0	10	0
		F	0	14	122	0	0	58	0	0	8,86	10	0	0	3,10	0
		G	3	2	13	0	0	10	0	2	10	8,77	0	0	10	0

NUMBER OF USERS - OLD ELDON SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE					RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEKEND	COLD	A	11	0	0	3	3	0	0	0	4	1	0	64	0	2	1
		B	23	0	0	9	4	1	0	0	6	3	0	111	3	2	0
		C	73	0	0	4	25	9	0	3	7	19	6	523	13	7	3
		D	134	0	20	29	140	6	0	30	20	10	9	738	30	22	12
		E	111	0	25	25	11	1	0	27	10	10	2	496	15	22	7
		F	41	0	15	8	0	0	0	15	3	0	0	338	8	4	3
		G	9	0	3	2	1	0	0	3	0	0	0	120	0	0	0
		A	31	0	0	5	7	4	0	0	1	8	6	204	4	3	0
		B	72	2	0	3	14	26	2	0	5	13	7	410	7	5	4
		C	86	1	19	12	9	2	0	15	15	10	3	543	5	5	2
		D	156	0	40	10	30	10	0	33	3	25	5	943	10	15	0
		E	253	0	60	53	10	3	0	71	46	8	2	697	10	2	4
		F	114	0	35	20	6	2	0	29	15	5	2	416	10	3	0
		G	18	0	8	2	1	0	0	3	1	3	0	63	0	0	0
	RAIN	A	7	0	0	2	2	2	0	0	0	1	0	161	3	2	3
		B	5	0	0	0	4	1	0	0	0	0	0	178	0	0	0
		C	15	0	0	2	9	2	0	0	1	1	0	304	6	12	0
		D	8	0	0	3	2	1	0	0	1	1	0	371	7	7	0
		E	119	0	35	20	20	1	0	17	15	10	1	529	15	20	5
		F	56	0	18	7	3	0	0	18	9	1	0	391	7	13	7
		G	7	0	4	3	0	0	0	0	0	0	0	10	2	0	0
		A	1	0	0	0	1	0	0	0	0	0	0	48	0	2	0
		B	2	0	0	0	2	0	0	0	0	0	0	137	0	0	0
		C	9	0	0	4	5	0	0	0	0	0	0	280	4	8	0
		D	8	0	0	4	3	1	0	0	0	0	0	391	6	12	0
		E	45	0	6	4	15	2	0	7	2	8	1	497	10	16	7
		F	38	0	4	8	1	0	0	4	21	0	0	448	10	11	4
		G	4	0	2	2	0	0	0	0	0	0	0	42	2	1	0
	SUMMER	A	59	0	0	4	26	2	0	0	2	24	1	98	5	4	2
		B	29	0	0	3	10	5	0	0	2	7	2	75	3	1	2
		C	86	1	1	10	11	18	1	4	10	18	12	509	2	6	4
		D	164	0	15	45	21	2	0	10	60	11	0	645	25	20	5
		E	168	0	30	13	38	5	0	25	16	38	3	592	8	16	7
		F	94	3	20	22	7	0	2	22	13	5	0	329	12	45	8
		G	19	0	12	5	0	0	0	2	0	0	0	58	7	7	0
		A	55	1	0	2	21	7	1	0	2	13	8	341	7	6	7
		B	128	0	5	11	48	5	0	8	7	39	5	638	10	15	5
		C	260	0	10	50	60	22	0	13	30	55	20	974	20	10	5
		D	311	0	95	25	50	8	0	70	21	36	6	1065	18	20	0
		E	259	0	58	45	30	5	0	53	42	22	4	731	10	15	3
		F	194	0	66	25	15	2	0	55	20	10	1	584	20	30	10
		G	28	0	13	5	4	1	0	4	1	0	0	63	8	6	0

A 3.8. BLUE CARPET

PEDESTRIAN TRAFFIC - BLUE CARPET																		
			MALE					FEMALE					TOTAL by path (*)					
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6
WEEK	COLD	**A**	1	0	7	15	2	1	1	2	6	1	29	5	4	0	0	0
		B	4	0	9	22	3	7	2	5	14	2	33	22	11	1	3	0
		C	0	2	24	38	6	0	1	17	30	7	59	38	18	6	0	0
		D	2	2	7	31	5	2	4	10	24	2	53	31	10	2	0	0
		E	0	2	16	13	5	1	1	13	13	4	58	0	5	0	9	0
		F	0	1	10	14	0	1	1	4	6	0	35	0	2	0	0	0
		G	0	0	9	5	0	0	0	6	4	0	21	0	0	0	0	0
		A	0	0	4	3	1	0	0	5	9	1	16	0	6	1	0	0
		B	1	0	18	9	7	1	0	22	6	9	62	3	6	2	1	0
		C	2	0	28	26	4	1	1	26	14	4	62	20	18	10	6	0
		D	2	0	28	24	13	0	0	16	27	11	79	21	19	7	0	0
		E	0	1	22	18	0	0	2	16	10	1	66	1	4	2	0	0
		F	1	2	18	12	1	2	3	15	14	0	48	0	17	0	3	0
		G	0	0	7	6	0	0	0	4	4	0	18	0	3	0	0	0
	RAIN	**A**	0	0	4	6	2	0	0	4	7	1	21	3	2	0	0	0
		B	10	0	4	14	3	12	0	2	10	2	29	25	7	0	0	0
		C	0	1	15	40	7	0	2	15	20	8	97	7	4	3	1	0
		D	0	0	3	30	14	0	0	2	25	11	75	15	3	2	0	0
		E	0	0	12	12	5	0	0	10	10	7	51	6	0	0	0	0
		F	0	0	13	10	2	0	0	9	3	2	33	0	3	0	3	0
		G	0	0	15	4	1	0	2	10	1	0	28	0	5	0	0	0
		A	0	2	8	7	1	0	1	8	6	0	22	0	11	1	1	0
		B	0	0	10	11	2	0	0	10	12	3	41	2	6	1	0	0
		C	0	2	16	23	9	1	2	14	18	9	60	14	15	9	0	0
		D	1	0	18	20	8	0	0	17	16	2	70	5	9	5	0	0
		E	2	5	25	40	2	1	6	27	30	2	66	20	28	25	5	0
		F	0	2	20	6	0	0	3	15	4	0	45	0	6	0	0	0
		G	0	3	28	5	2	0	1	14	2	1	46	0	6	0	0	0
	SUMMER	**A**	0	0	10	10	1	0	0	4	14	2	32	0	7	0	4	0
		B	0	0	10	14	5	0	0	4	6	6	31	8	7	2	0	0
		C	1	0	13	44	8	0	0	10	34	5	55	14	16	23	14	0
		D	0	1	21	24	2	0	2	15	18	3	70	9	7	8	0	0
		E	0	2	18	13	1	0	2	21	11	1	56	6	6	2	1	0
		F	1	0	18	9	0	0	0	24	15	0	58	0	9	1	0	0
		G	0	5	10	7	0	0	1	7	5	0	35	0	0	0	0	0
		A	0	0	8	15	3	0	0	7	16	1	45	1	5	2	0	0
		B	0	1	14	21	2	0	2	17	12	0	51	4	11	6	1	0
		C	1	1	18	39	1	0	1	18	54	1	75	0	23	20	9	0
		D	0	0	18	14	4	1	0	15	12	0	57	0	5	5	0	0
		E	1	1	25	28	3	0	2	20	19	1	70	4	7	20	9	0
		F	0	0	20	9	0	0	1	19	4	1	50	0	4	0	0	0
		G	0	0	3	8	0	0	0	6	8	0	25	0	1	0	0	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - BLUE CARPET																
			Number of users							Time spent (av.)						
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEK	COLD	**A**	0	2	0	0	0	1	0	0	1	0	0	0	5	0
		B	0	2	0	0	0	0	0	0	2,5	0	0	0	0	0
		C	1	6	0	0	0	0	0	4	3,17	0	0	0	0	0
		D	0	5	2	0	0	0	2	0	1,4	1	0	0	0	4
		E	0	4	0	0	0	0	0	0	3	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		B	4	1	0	0	0	0	0	2,5	3	0	0	0	0	0
		C	0	12	0	0	0	0	1	0	3,5	0	0	0	0	10
		D	0	1	0	0	0	2	1	0	3	0	0	0	7,5	2
		E	0	2	0	0	0	0	0	0	1	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RAIN	**A**	2	0	0	0	0	0	0	7	0	0	0	0	0	0
		B	0	4	0	0	0	0	0	0	1	0	0	0	0	0
		C	0	4	0	0	0	0	0	0	2,5	0	0	0	0	0
		D	0	11	0	0	0	0	0	0	4,64	0	0	0	0	0
		E	0	1	0	0	0	0	0	0	2	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	1	1	0	0	0	1	0	3	3	0	0	0	10	0
		B	1	3	0	0	0	0	0	2	7	0	0	0	0	0
		C	0	2	0	0	0	0	2	0	1,5	0	0	0	0	4
		D	1	6	1	0	0	3	0	3	3	3	0	0	10	0
		E	0	4	0	0	0	0	0	0	4	0	0	0	0	0
		F	0	1	0	0	0	0	0	0	2	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUMMER	**A**	0	0	2	0	0	0	1	0	0	3,5	0	0	0	1
		B	3	2	3	0	0	0	0	2,67	10	7,33	0	0	0	0
		C	0	6	4	0	0	0	2	0	5,17	6,5	0	0	0	3
		D	0	1	8	0	0	3	1	0	6	4,88	0	0	10	10
		E	0	0	6	0	0	0	1	0	0	3,5	0	0	0	3
		F	0	1	0	0	0	0	0	0	2	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	2	0	0	0	0	1	0	1	0	0	0	0	2
		B	0	7	0	0	0	0	0	0	5,71	0	0	0	0	0
		C	0	11	6	0	0	4	2	0	2,45	4	0	0	4,5	5
		D	0	3	5	0	0	1	0	0	7	6	0	0	6	0
		E	0	5	9	0	0	0	1	0	4,6	4,67	0	0	0	10
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	1	1	1	0	0	0	0	2	8	2	0	0	0	0

NUMBER OF USERS - BLUE CARPET																		
			USE											PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE					RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEK	COLD	**A**	3	0	0	1	0	0	0	0	0	2	0	38	1	0	0
		B	2	0	0	0	2	0	0	0	0	0	0	64	3	3	0
		C	7	0	0	1	2	2	0	0	0	2	0	129	3	0	0
		D	9	0	2	2	2	1	0	0	2	0	0	93	3	2	0
		E	4	0	0	0	2	0	0	0	0	2	0	26	1	7	0
		F	0	0	0	0	0	0	0	0	0	0	0	35	0	2	0
		G	0	0	0	0	0	0	0	0	0	0	0	21	2	1	0
		A	0	0	0	0	0	0	0	0	0	0	0	18	0	4	1
		B	5	0	0	0	2	1	0	0	0	1	1	70	2	6	0
		C	13	0	0	0	6	0	0	0	2	5	0	108	3	4	2
		D	4	0	0	1	0	1	0	0	1	1	0	114	1	9	0
		E	2	0	0	0	0	0	0	0	0	2	0	68	3	1	0
		F	0	0	0	0	0	0	0	0	0	0	0	62	2	4	0
		G	0	0	0	0	0	0	0	0	0	0	0	17	0	4	0
	RAIN	**A**	2	0	0	0	1	0	0	0	0	1	0	24	2	0	0
		B	4	0	0	0	2	0	0	0	0	2	0	61	0	0	0
		C	4	0	0	0	3	0	0	0	0	1	0	112	0	0	0
		D	11	0	0	1	6	0	0	0	0	4	0	94	1	2	0
		E	1	0	0	0	0	0	0	0	0	1	0	51	1	3	2
		F	0	0	0	0	0	0	0	0	0	0	0	32	0	7	0
		G	0	0	0	0	0	0	0	0	0	0	0	24	3	5	1
		A	3	0	0	2	1	0	0	0	0	0	0	30	2	4	0
		B	4	0	0	0	2	1	0	0	0	1	0	48	4	0	0
		C	4	0	0	0	2	0	0	0	0	2	0	90	3	3	2
		D	11	0	0	3	1	0	0	0	5	2	0	86	4	1	2
		E	4	0	0	1	1	0	0	0	0	2	0	135	3	6	0
		F	1	0	0	1	0	0	0	0	0	0	0	44	1	6	0
		G	0	0	0	0	0	0	0	0	0	0	0	46	0	10	0
	SUMMER	**A**	3	0	0	2	1	0	0	0	0	0	0	40	1	3	0
		B	8	0	0	1	3	2	0	0	0	1	1	48	1	3	0
		C	0	0	0	1	5	1	0	0	1	4	0	124	0	3	0
		D	0	0	2	2	1	0	0	0	2	6	0	90	0	8	0
		E	7	0	0	3	1	0	0	0	2	1	0	71	1	3	1
		F	0	0	0	1	0	0	0	0	0	0	0	62	3	2	1
		G	0	0	0	0	0	0	0	0	0	0	0	33	0	2	0
		A	3	0	0	0	0	2	0	0	0	0	0	50	1	2	0
		B	0	0	0	0	6	0	0	0	0	1	0	73	0	3	0
		C	23	0	0	1	9	0	0	0	2	11	0	133	1	1	0
		D	9	0	0	4	2	0	0	0	1	2	0	69	2	3	1
		E	15	0	0	6	4	0	0	0	3	2	0	108	4	2	1
		F	0	0	0	0	0	0	0	0	0	0	0	48	1	6	1
		G	2	0	0	1	1	0	0	0	0	0	0	20	1	6	0

PEDESTRIAN TRAFFIC - BLUE CARPET																		
			MALE					FEMALE					TOTAL by path (*)					
			CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	1	2	3	4	5	6
WEEKEND	COLD	**A**	0	0	17	10	6	0	0	5	4	0	37	0	3	0	0	0
		B	0	0	8	15	5	0	0	6	7	1	43	0	1	0	0	0
		C	3	2	17	20	7	2	2	10	20	7	73	18	5	0	0	0
		D	4	0	10	12	6	2	0	13	12	10	47	25	4	0	0	0
		E	1	1	13	21	2	1	0	7	23	2	64	5	3	0	0	0
		F	2	1	21	14	1	0	0	15	11	0	63	0	2	0	0	0
		G	0	3	13	8	0	0	2	15	6	0	47	0	0	0	0	0
		A	0	0	4	16	3	0	0	1	11	1	35	0	3	0	0	0
		B	5	0	19	34	4	3	0	8	22	5	83	19	8	0	0	0
		C	3	0	21	22	6	1	0	18	27	8	88	25	1	0	0	0
		D	4	4	16	24	6	7	2	9	32	3	79	25	3	0	0	0
		E	3	3	14	13	8	1	1	15	13	4	57	10	10	0	0	0
		F	0	1	17	13	3	1	5	12	11	1	66	0	2	0	0	0
		G	0	0	8	6	0	0	0	4	5	0	22	0	1	0	0	0
	RAIN	**A**	0	0	10	10	7	0	0	9	10	3	47	0	3	0	0	0
		B	2	0	6	10	7	3	0	7	10	6	38	10	3	0	0	0
		C	1	1	12	13	2	0	2	7	13	5	39	15	2	0	0	0
		D	2	0	7	15	3	0	0	10	15	1	34	17	3	0	0	0
		E	1	1	21	10	3	1	1	9	16	2	45	15	8	0	0	0
		F	2	0	15	9	1	1	0	15	3	0	42	0	4	0	0	0
		G	0	1	7	5	1	0	0	7	2	0	23	0	1	0	0	0
		A	0	0	7	17	10	0	0	7	17	10	54	10	5	0	0	0
		B	0	0	8	13	6	0	0	7	12	11	54	0	5	0	0	0
		C	1	1	17	30	7	2	1	15	21	6	77	17	9	0	0	0
		D	2	0	12	15	3	1	0	13	20	2	58	6	5	0	0	0
		E	1	2	27	17	3	1	1	13	17	2	52	37	1	0	0	0
		F	0	0	27	12	2	0	0	17	7	0	62	0	3	0	0	0
		G	0	1	12	11	3	0	3	10	12	2	52	0	2	0	0	0
	SUMMER	**A**	0	0	4	2	0	0	0	1	2	0	12	0	0	0	0	0
		B	0	0	13	7	5	0	2	9	4	1	34	0	2	0	0	4
		C	2	2	27	15	3	2	7	15	16	2	83	8	3	0	0	0
		D	3	2	27	19	12	2	1	23	16	8	103	8	2	0	0	0
		E	0	4	20	10	2	2	2	7	7	0	53	1	1	0	0	0
		F	1	1	12	10	0	1	2	10	3	0	41	0	3	0	0	0
		G	0	3	13	8	0	0	1	14	7	0	46	0	0	0	0	0
		A	0	1	14	16	6	0	2	15	8	3	68	1	3	0	0	0
		B	0	2	14	12	5	1	3	9	11	4	50	10	4	0	0	0
		C	5	1	29	24	1	5	6	31	35	3	120	18	10	0	0	0
		D	1	4	17	17	16	1	3	18	15	3	69	10	7	0	0	0
		E	0	1	21	12	1	0	6	12	11	2	65	0	3	0	0	0
		F	0	0	23	7	1	0	1	24	8	0	76	0	0	0	0	0
		G	0	0	7	6	0	0	0	6	3	0	22	0	0	0	0	0

(*) includes static use that follows a given pedestrian path

USE PATTERNS - BLUE CARPET SQUARE																	
			Number of users							Time spent (av.)							
ACTIVITY			STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE	STROLLING	STANDING	SITTING	JOGGING	SPORTS	EAT	MOBILE
WEEKEND	COLD	**A**	2	0	0	0	0	1	0	2	0	0	0	0	4	0
		B	2	0	0	0	0	0	2	3	0	0	0	0	0	2,5
		C	0	6	1	0	0	2	0	0	2,83	10	0	0	10	0
		D	2	3	1	0	0	0	1	3	1	5	0	0	0	4
		E	0	1	0	0	0	0	0	0	2	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	2	0	0	0	0	0	0	2	0	0	0	0	0	0
		B	0	11	0	0	0	0	0	0	2	0	0	0	0	0
		C	0	6	2	0	0	2	1	0	2	3	0	0	5	4
		D	0	0	2	0	0	1	0	0	0	1	0	0	6	0
		E	0	2	1	0	0	0	0	0	1,5	4	0	0	0	0
		F	2	2	0	0	0	0	0	1	8	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RAIN	**A**	0	0	0	0	0	0	1	0	0	0	0	0	0	3
		B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		D	0	1	0	0	0	0	0	0	1	0	0	0	0	0
		E	6	1	0	0	0	0	0	2	5	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	1	0	0	0	0	0	0	1	0	0	0	0	0
		A	0	1	0	0	0	0	0	0	5	0	0	0	0	0
		B	0	1	0	0	0	0	1	0	2	0	0	0	0	2
		C	0	2	0	0	0	0	0	0	2	0	0	0	0	0
		D	0	1	0	0	0	0	0	0	6	0	0	0	0	0
		E	2	6	0	0	0	0	0	2	4	0	0	0	0	0
		F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SUMMER	**A**	0	0	3	0	0	0	0	0	0	5	0	0	0	0
		B	1	0	3	0	0	0	0	2,5	0	2	0	0	0	0
		C	1	0	3	0	0	0	0	1,5	0	3	0	0	0	0
		D	0	0	3	0	0	0	0	0	0	10	0	0	0	0
		E	1	0	5	1	0	0	0	10	0	7	2	0	0	0
		F	0	3	0	0	0	0	0	0	5,67	0	0	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		A	0	12	2	0	0	0	0	0	2,33	6	0	0	0	0
		B	0	10	4	0	0	0	0	0	8,2	6,25	0	0	0	0
		C	0	2	8	0	0	0	0	0	1	3,62	0	0	0	0
		D	0	0	0	0	0	0	3	0	0	0	0	0	0	7,67
		E	0	0	4	0	0	1	0	0	0	7	0	0	10	0
		F	0	5	3	0	4	0	0	0	4,6	2,33	0	1	0	0
		G	0	1	0	0	0	0	0	0	10	0	0	0	0	0

NUMBER OF USERS - BLUE CARPET SQUARE																		
			USE											PED + USE				
AGE GROUP/ RACE			TOTAL	MALE					FEMALE					RACE				
				CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	CHILD	TEEN	YOUNG AD	MID AGE	ELDERLY	WHITE	BLACK	ASIAN	OTHER
WEEKEND	COLD	A	3	0	0	3	0	0	0	0	0	0	0	42	0	3	0
		B	4	0	0	2	1	0	0	0	1	0	0	43	1	0	2
		C	9	0	0	1	5	0	0	0	0	3	0	99	0	0	0
		D	1	0	2	1	0	0	0	0	1	2	0	65	0	11	0
		E	1	0	0	0	1	0	0	0	0	0	0	66	3	3	0
		F	0	0	0	0	0	0	0	0	0	0	0	59	5	1	0
		G	0	0	0	0	0	0	0	0	0	0	0	44	2	1	0
		A	2	0	0	1	1	0	0	0	0	0	0	37	3	0	0
		B	11	0	0	6	1	0	0	0	4	0	0	107	1	1	1
		C	11	0	0	6	2	0	0	0	1	2	0	107	3	5	2
		D	3	0	2	1	0	0	0	0	0	0	0	103	2	3	2
		E	3	0	0	0	2	0	0	0	0	1	0	74	3	1	0
		F	4	1	0	1	1	0	0	0	1	0	0	61	4	7	0
		G	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0
	RAIN	A	1	0	0	1	0	0	0	0	0	0	0	50	0	0	0
		B	0	0	0	0	0	0	0	0	0	0	0	51	0	0	0
		C	0	0	0	0	0	0	0	0	0	0	0	56	0	0	0
		D	1	0	0	0	1	0	0	0	0	0	0	50	1	3	0
		E	7	0	0	1	3	0	0	0	1	2	0	66	3	3	0
		F	0	0	0	0	0	0	0	0	0	0	0	56	0	7	3
		G	1	0	0	1	0	0	0	0	0	0	0	18	1	4	1
		A	1	0	0	0	1	0	0	0	0	0	0	66	2	1	0
		B	2	0	0	1	1	0	0	0	0	0	0	59	0	0	0
		C	2	0	0	0	2	0	0	0	0	0	0	96	4	3	0
		D	1	0	0	0	1	0	0	0	0	0	0	67	2	0	0
		E	8	0	0	2	5	0	0	0	0	1	0	86	2	5	0
		F	0	0	0	0	0	0	0	0	0	0	0	65	0	0	0
		G	0	0	0	0	0	0	0	0	0	0	0	45	2	7	0
	SUMMER	A	3	0	0	0	2	0	0	0	0	0	0	12	0	0	0
		B	4	0	0	0	2	1	0	0	0	1	0	29	2	4	0
		C	4	0	0	0	1	0	0	1	0	2	0	90	1	4	0
		D	3	0	0	3	0	0	0	0	0	0	0	109	3	4	0
		E	7	0	0	3	2	1	0	0	0	1	0	51	2	7	1
		F	3	0	0	0	2	0	0	0	0	1	0	38	0	5	0
		G	0	0	0	0	0	0	0	0	0	0	0	41	2	3	0
		A	14	0	0	3	11	0	0	0	0	0	0	76	1	2	0
		B	14	0	0	1	9	1	0	0	2	1	0	71	3	0	1
		C	10	0	0	0	2	1	0	0	4	2	1	138	5	6	1
		D	0	0	0	1	1	0	0	0	1	0	0	80	0	8	0
		E	0	0	3	0	0	0	0	0	2	0	0	62	2	5	2
		F	0	4	1	3	0	0	0	1	1	2	0	57	11	8	0
		G	1	0	0	0	1	0	0	0	0	0	0	22	1	0	0

A 3.9. SUMMARY

PASS-USE RATIO								
	Daily periods							
SPACE	A	B	C	D	E	F	G	Av.
Trindade	9,39	7,42	8,99	6,63	5,10	6,33	5,79	7,09
D. João I	2,47	6,17	6,15	4,01	4,27	6,12	3,68	4,70
Cardosas	3,70	2,66	2,57	3,00	1,66	1,12	4,67	2,77
Lisboa	3,50	2,44	2,14	2,59	2,53	3,70	2,88	2,83
Times	13,21	13,62	6,90	5,15	4,78	3,04	6,03	7,53
Waterloo	5,83	6,73	3,89	4,53	6,80	7,85	24,00	8,52
Old Eldon	5,96	6,37	4,96	4,44	3,52	3,95	3,18	4,62
Blue Carpet	4,96	10,69	12,34	14,13	13,71	24,43	34,33	16,37

PASS-USE RATIO							
	Week			Weekend			
SPACE	Good w	Bad w	Summer	Good w	Bad w	Summer	Av.
Trindade	6,70	8,81	7,64	6,58	7,82	4,20	6,96
D. João I	2,74	4,37	5,70	3,93	6,07	5,26	4,68
Cardosas	1,64	3,73	2,48	1,97	2,65	1,22	2,28
Lisboa	3,18	2,85	2,81	2,85	3,60	1,79	2,85
Times	21,85	22,88	3,74	6,74	22,57	1,94	13,29
Waterloo	10,40	9,75	3,58	9,73	14,29	3,70	8,58
Old Eldon	5,54	10,96	2,86	4,26	10,19	2,91	6,12
Blue Carpet	13,80	14,64	8,00	13,19	26,57	8,46	14,11

EDGE RATIO									
		Daily period							
	Space	A	B	C	D	E	F	G	Av.
USE	**Trindade**	2,11	2,82	2,91	3,64	2,21	2,03	2,23	2,57
USE	**Trindade Sq.**	2,12	2,92	2,90	3,65	2,06	2,03	2,52	2,60
USE	**Trindade Gd.**	2,00	2,25	3,00	3,50	4,25	2,00	0,00	2,43
USE	**D. João I**	0,17	1,03	0,47	1,13	1,31	1,08	0,80	0,85
USE	**Cardosas**	0,43	0,26	0,35	0,67	0,58	0,20	0,50	0,43
USE	**Lisboa**	0,61	0,33	0,47	0,65	0,72	0,66	1,42	0,69
USE	**Times**	3,67	2,78	14,17	17,33	13,18	14,80	12,00	11,13
USE	**Waterloo**	0,50	0,38	1,38	0,70	0,50	1,17	4,00	1,23
USE	**Old Eldon**	0,41	0,32	0,38	0,34	0,30	0,25	0,38	0,34
USE	**Blue Carpet**	0,53	1,92	0,89	0,65	1,69	0,75	5,00	1,63
PASS	**Trindade**	1,01	0,74	0,69	0,72	0,76	0,80	0,91	0,80
PASS	**D. João I**	2,25	2,42	2,23	1,99	3,15	1,93	1,19	2,17
PASS	**Cardosas**	1,85	2,85	4,90	4,00	3,71	4,00	6,00	3,90
PASS	**Lisboa**	6,50	4,21	3,50	3,21	2,16	2,75	1,66	3,43
PASS	**Times**	0,28	0,24	0,22	0,20	0,14	0,14	0,19	0,20
PASS	**Waterloo**	0,67	0,57	0,54	0,54	0,44	0,34	0,21	0,47
PASS	**Old Eldon**	0,24	0,31	0,31	0,39	0,32	0,24	0,15	0,28
PASS	**Blue Carpet**	0,28	0,36	0,47	0,35	0,36	0,10	0,08	0,29

EDGE RATIO								
		Week			Weekend			
	Space	Good w	Bad w	Summer	Good w	Bad w	Summer	Av.
USE	**Trindade**	1,57	8,09	2,88	1,61	11,75	1,76	4,61
USE	**Trindade Sq.**	1,42	8,70	3,32	1,48	23,50	1,69	6,69
USE	**Trindade Gd.**	3,00	2,00	0,67	1,50	0,00	2,00	1,53
USE	**D. João I**	0,18	5,44	0,87	0,27	3,09	0,89	1,79
USE	**Cardosas**	0,68	0,50	0,38	0,50	0,31	0,21	0,43
USE	**Lisboa**	1,11	0,78	1,22	0,28	0,50	0,92	0,80
USE	**Times**	5,50	7,33	16,90	2,88	0,00	15,64	8,04
USE	**Waterloo**	4,00	0,33	1,00	0,38	1,33	0,42	1,24
USE	**Old Eldon**	0,46	0,44	0,36	0,27	0,28	0,28	0,35
USE	**Blue Carpet**	1,14	0,75	1,70	0,78	2,50	0,85	1,29
PASS	**Trindade**	0,70	0,82	0,73	0,74	0,65	1,07	0,79
PASS	**D. João I**	3,37	2,99	1,58	2,05	2,64	1,37	2,33
PASS	**Cardosas**	8,86	1,33	3,24	8,29	4,63	1,67	4,67
PASS	**Lisboa**	2,18	1,99	3,63	2,86	2,68	2,78	2,69
PASS	**Times**	0,27	0,15	0,24	0,17	0,14	0,16	0,19
PASS	**Waterloo**	0,37	0,21	0,72	0,20	0,53	0,56	0,43
PASS	**Old Eldon**	0,29	0,25	0,41	0,34	0,21	0,33	0,30
PASS	**Blue Carpet**	0,51	0,39	0,41	0,22	0,27	0,12	0,32

RUSH HOUR RATIO									
		Daily period							
	Space	A	B	C	D	E	F	G	Av.
USE	**Trindade**	2,14	1,68	2,00	1,55	1,00	1,65	2,14	1,74
USE	**Trindade Sq.**	2,04	1,69	2,04	1,49	1,00	1,54	1,96	1,68
USE	**Trindade Gd.**	3,50	1,62	1,75	2,33	1,00	3,50	7,00	2,96
USE	**D. João I**	1,00	1,90	2,14	1,32	1,13	1,90	1,71	1,59
USE	**Cardosas**	6,80	2,34	2,96	3,40	1,00	1,39	22,67	5,79
USE	**Lisboa**	3,70	1,37	1,10	1,29	1,00	1,26	1,04	1,54
USE	**Times**	5,64	4,65	1,74	1,44	1,01	1,00	4,05	2,79
USE	**Waterloo**	1,58	1,73	1,00	1,12	1,27	1,46	3,80	1,71
USE	**Old Eldon**	4,77	2,93	1,32	1,01	1,00	1,52	7,74	2,90
USE	**Blue Carpet**	2,30	1,51	1,00	1,39	1,51	3,79	8,83	2,91
PASS	**Trindade**	1,16	1,16	1,13	1,19	1,00	1,33	1,89	1,27
PASS	**D. João I**	1,53	1,16	1,31	1,24	1,00	1,17	1,76	1,31
PASS	**Cardosas**	3,05	1,47	1,92	1,88	1,00	2,05	8,07	2,78
PASS	**Lisboa**	3,10	1,65	1,51	1,46	1,16	1,00	1,06	1,56
PASS	**Times**	2,01	1,61	1,19	1,32	1,00	1,55	3,17	1,69
PASS	**Waterloo**	1,71	1,62	1,62	1,56	1,18	1,18	1,00	1,41
PASS	**Old Eldon**	3,51	2,01	1,16	1,00	1,25	1,69	10,68	3,04
PASS	**Blue Carpet**	5,74	1,75	1,00	1,22	1,36	1,91	3,17	2,31

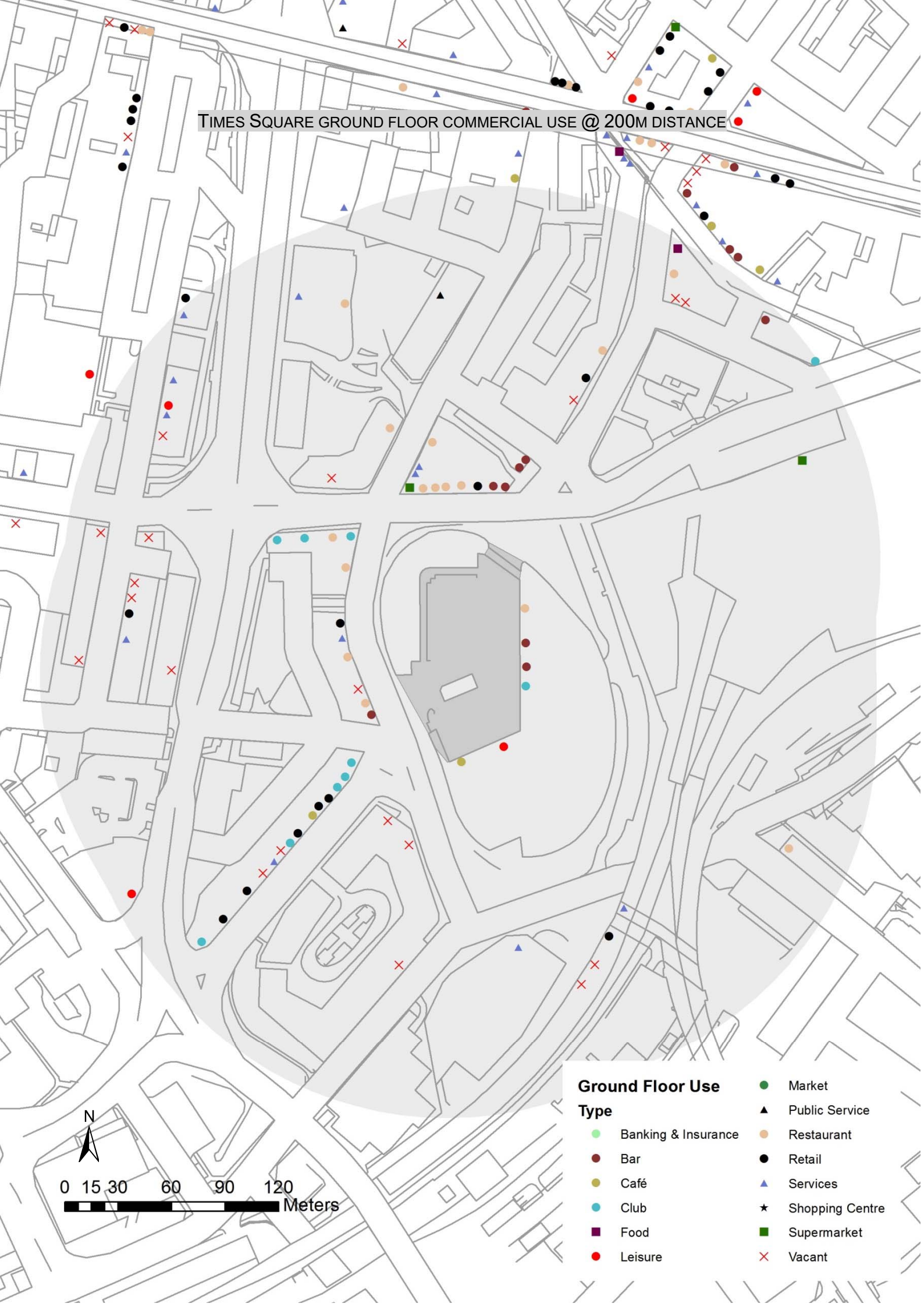
A 4. COMMERCIAL DISTRIBUTION

TRINDADE METRO ST. SQUARE GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE

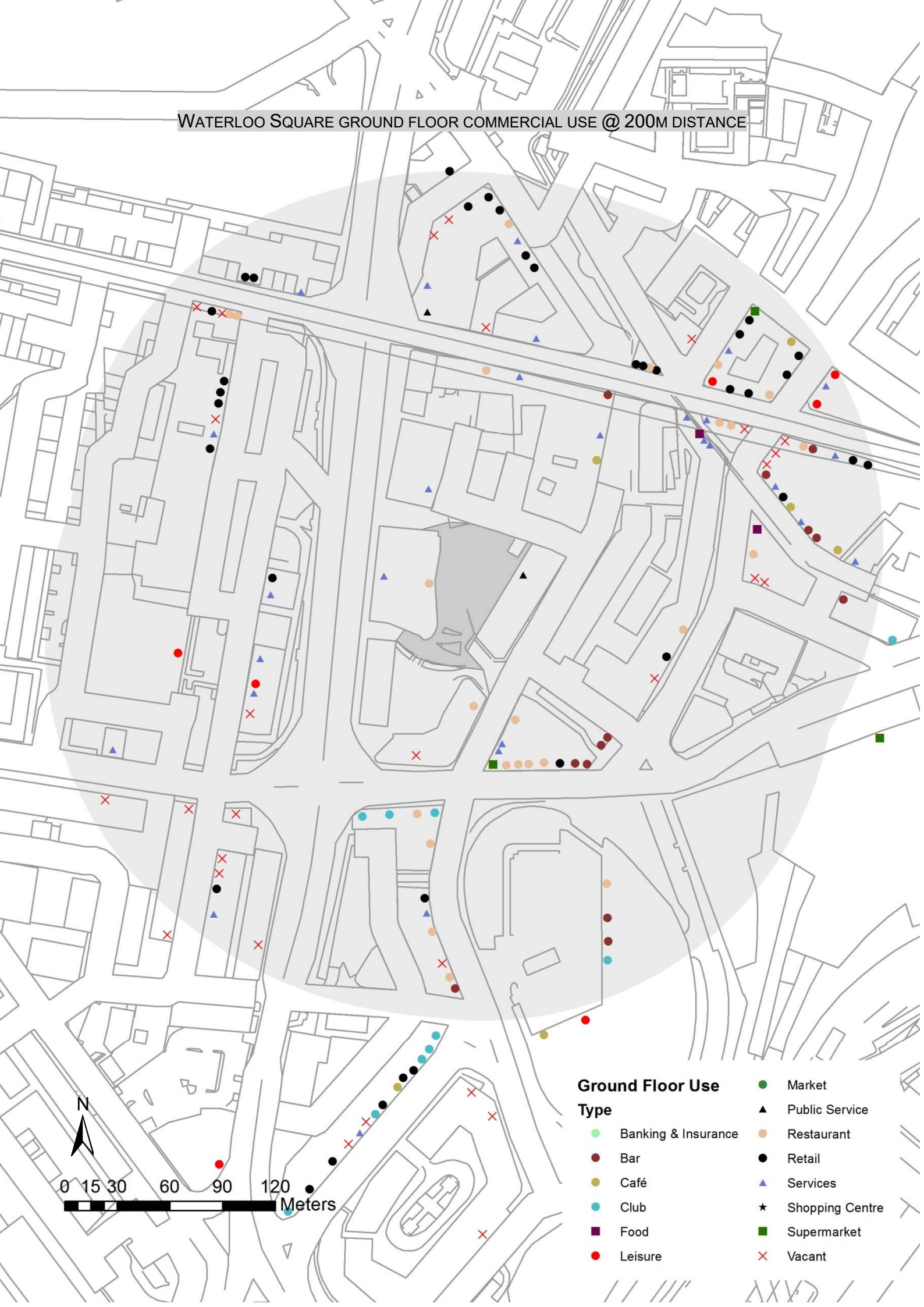
D. JOÃO I SQUARE GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE


CARDOSAS SQUARE GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE
N
0 15 30 60 90 120
Meters
Ground Floor Use
Type
Banking & Insurance
Bar
Café
Club
Food
Leisure
Market
Public Services
Restaurant
Retail
Services
Shopping Centre
Supermarket
Vacant

LISBOA SQUARE GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE


TIMES SQUARE GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE
N
0 15 30 60 90 120
Meters
Ground Floor Use
Type
Banking & Insurance
Bar
Café
Club
Food
Leisure
Market
Public Service
Restaurant
Retail
Services
Shopping Centre
Supermarket
Vacant

WATERLOO SQUARE GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE



OLD ELDON SQUARE GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE

BLUE CARPET GROUND FLOOR COMMERCIAL USE @ 200M DISTANCE

SPACE	**Banking & Insurance**	**Bar**	**Café**	**Club**	**Food sale**	**Leisure**	**Public Services**	**Restaurant**	**Retail**	**Services**	**Shopping Centre**	**Supermarket**	**Vacant**	**TOTAL**	**Occupied**	**% occupied**
	100m	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**	**100m**
Trindade	3	1	7	0	4	0	4	9	40	10	1	0	48	127	79	**62,2**
D. João I	8	1	11	2	1	2	0	17	58	6	0	0	51	157	106	**67,5**
Cardosas	3	0	11	0	3	2	0	21	90	6	0	1	91	228	137	**60,1**
Clérigos	2	12	17	7	2	1	0	17	78	6	0	0	57	189	132	**69,8**
Times	0	7	2	8	0	1	0	11	5	3	0	1	5	43	38	**88,4**
Waterloo	0	5	1	3	0	1	1	10	3	9	0	1	3	37	34	**91,9**
Old Eldon	0	0	3	0	3	0	0	9	17	7	3	1	2	45	43	**95,6**
Blue Carpet	2	1	0	1	0	2	0	0	5	2	0	0	5	18	13	**72,2**
	200m	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**	**200m**
Trindade	12	1	28	0	6	0	7	22	127	30	1	0	136	370	234	**63,2**
D. João I	20	3	33	3	5	2	2	26	260	19	1	1	105	408	303	**74,3**
Cardosas	11	6	22	5	6	2	3	44	224	16	0	2	205	563	358	**63,6**
Clérigos	5	24	33	8	9	2	0	72	181	12	0	4	161	505	344	**68,1**
Times	0	8	2	10	1	3	1	15	10	11	0	2	19	82	63	**76,8**
Waterloo	0	13	4	4	1	5	2	24	30	27	0	2	23	135	112	**83,0**
Old Eldon	8	6	13	1	10	8	1	28	82	25	4	9	17	212	195	**92,0**
Blue Carpet	8	1	6	2	3	7	0	1	26	14	0	0	27	95	68	**71,6**